AN APPLICATION OF NATIONAL AIDS SPENDING ASSESSMENT (NASA) FRAMEWORK TO RESOURCE FLOWS FOR HIV / AIDS

A CASE STUDY OF DHARWAD DISTRICT

THE THESIS SUBMITTED TO THE KANNADA
UNIVERSITY, HAMPI
FOR THE AWARD OF THE DEGREE OF

Doctor of Philosophy

In

ECONOMICS

BY

DATTATRAYA. R. REVANKAR

Research Guide

Prof. VINOD. B. ANNIGERI

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CMDR

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DECLARATION

I do hereby solemnly that this research work of mine titled "An Application Of National AIDS Spending Assessment (NASA) Framework to resources flows for HIV/AIDS- A study of Dharwad District", carried out under the supervision of Prof .Vinod .B.Annigeri Prof. Centre for multi-Disciplinary Development Research Centre,(CMDR), Dharwad, being presented as a thesis for the award of the degree of Doctor of Philosophy in economics to the Kannada University, Hampi, is original and the same has not been submitted either in the part or in full for the award of any other degree of any other University.

Date 11/10/2013

Dattatraya. R. Revankar

CERTIFICATE

This is to certify that the thesis titled **"An Application Of National AIDS Spending Assessment (NASA) Framework to resources flows for HIV/AIDS- A study of Dharwad District"**, is a bonafide research work carried out by Mr. Dattatraya. R. Revankar independently under my guidance and supervision. I also certify that this has not been previously submitted for the award of any degree, diploma, associateship or other similar title.

Date: 10/10/2013

(Prof. V B Annigeri)
Supervisor and Professor
Centre for Multi-Disciplinary
Development Research, Dharwad

Dedicated with love and affection
To

Respected Mother
late Smt. Rathibai

And

Respected Father
late Shri Ramachandra rao

Who have sown the seeds of knowledge in me
And

To Respected all My Teachers
Who have enriched my knowledge.

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CONTENTS

Declaration
Certificate
Acknowledgement
List of Tables
List of graphs
List of Figures, Pictures and Charts

Chapter	Title	Page. No
Chapter 1	**Introduction**	1
1.1	About Health Accounts & Disease Specific Accounts	2
1.2	Rationale of the study	3
1.3	Why Spending on Health is Important? View from the Literature	5
1.4	Impacts of HIV/AIDS on Economic Development	6
1.4.1	Impact of HIV/AIDS on Health Sector	7
1.5	Focus of the Study	9
1.5.1	Financing Mechanism of Health in India	9
1.5.2	Operational Issues in Health Planning and Financing	10
1.5.3	Empirical Issues of Health Financing in India	15
1.6.1	Why HIV/AIDS Accounts?	18
1.7	Need for the Study	20
1.8	Grey Areas of Research in Disease Specific Accounts	21
1.9	Research Questions:	21
1.10	Objectives of the study	21
1.11	Methodology	22
1.12	Limitations of the study	26
1.13	Outline of the Study	26
Chapter 2	**Literature Review**	
2.1	Overview of National Health Accounts (NHA)	35
2.1.1	Studies which have adopted NHA Methodology	35
2.2	An application of the NHA method to HIV/AIDS	39
2.3	National Aids Spending Assessment (NASA)	40
2.4	Countries which have adopted NASA Methodology	41

Chapter	Title	Page. No
2.5	International Experience in Tracking Resource Flows in the HIV/AIDS sector	48
2.6	Resource flows to HIV AIDS: A Global View	51
2.7	Health Spending in India	54
2.8	Household Out-of-Pocket Expenditure on Health	55
2.9	Public Financing of Health	57
2.9.1	Trends in public spending on health in India	59
2.9.2	Impact on equity due to low public spending	60
2.9.3	Centrally sponsored schemes-National Health Programmes (1991-2003)	60
2.10	Health Expenditure by the Central Government	61
2.11	Centralization of funds and inadequate capital expenditures	62
2.12	CGHS-a mandatory social health insurance scheme for the Central Government Employees	63
2.13	Low priority for preventive health care	63
2.14	Health expenditure by State Governments	65
Chapter 3	**Methodology of the Study**	
3.1	Geographical area and population coverage	70
3.2	Sample Selection:	76
3.2.1	Status of the epidemic in the Study district	76
3.3	Tools of Data Collection	77
3.4	List of Information Sought to get the Household Expenditure on various HIV/AIDS related services	80
3.5	Estimation Procedures	81
3.6	About Financial flows for HIV/AIDS	83
3.7	Broad activities which are covered under the NASA	83
3.8	District HIV/AIDS Accounts: Our Approach	88
3.8.1	Expenditure Boundary	88
3.8.2	Time Boundary	89
3.8.3	Functional Boundaries	90
3.9	Data Sources	91

Chapter	Title	Page. No
Chapter 4	**Health Status and Health Care Facilities in Karnataka State**	
4.1	Introduction	96
4.2	Health status	97
4.2.1	Karnataka's Health Status Compared to India	99
4.3	Health Care Services	101
4.4	NRHM Project	106
4.5	Human Resources	107
4.6	Organization of Health and Family Welfare Department	112
4.7	Indicators of Health Status in Karnataka	113
4.8	Child Health and Immunization	123
4.9	Maternal Health	124
4.10	Health Care Activities in Karnataka	126
4.11	Mental Health Programme	127
4.12	Medical development programme	128
4.13	Hospital Pharmacy	130
4.14	Department of Indian Systems of Medicine and Homeopathy	130
4.15	Department of Drugs Control	131
4.16	Implications / Significance of the HIV/AIDS trend in Karnataka	134
4.17	Nutritional Status	136
Chapter 5	**Health Care Financing in Karnataka State**	
5.1	Introduction	139
5.2	Administration and Direction	139
5.3	Delivery of Health Care Services: Public Institutions	144
5.4	Financing of Health in Karnataka	146
5.5	Healthcare Expenditure	148
5.6	Health Care Financing in Dharwad District	149
Chapter 6	**Scenario of HIV/AIDS in Karnataka State**	
6.1	Introduction:	153
6.2	The global Situation	154
6.3	Extent of HIV in India	157
6.4	National Level Programme Management	162
6.5	Karnataka state profile	164

Chapter	Title	Page. No
6.6	Health Care Facilities for HIV/AIDS in the Karnataka State	165
6.7	HIV Prevalence in the district of Karnataka state	166
6.8	HIV/AIDS Scenario in the Districts of Karnataka	169
6.9	Profile of the District	171
Chapter 7	**HIV/AIDS Accounts: A Sub- regional Analysis**	
7.1	Profile of HIV/AIDS Patients:	176
7.2	Socio-economic Status of the Surveyed HIV/AIDS affected Persons.	179
7.3	Expenditure Details about HIV AIDS	185
7.4	HIV/AIDS Accounts Matrices:	191
Chapter 8	**Estimating the Out of Pocket Spending (OOPS) to HIV/AIDS**	
8.1	Introduction	200
8.2	Out of Pocket Spending (OOPS) to HIV/AIDS	200
8.3	HIV/AIDS Expenditure of Households by Type	202
8.4	Health and Non Health Expenditure of HIV/AIDS by Households	203
8.5	Share of Out of Pocket Spending (OOPS) to total Expenditure to HIV/AIDS	204
8.6	Expenditure on HIV/AIDS by HIV/AIDS Affected Households	205
8.7	Household Expenditure by Service Provider	206
8.8	Sources of OOPS to HIV/AIDS	207
8.9	Few Observations	208
Chapter 9	**Concluding Observations and Suggestions**	
	References	217
	Appendix Tables	223

LIST OF TABLES

Table No	Table Title	Page. No
1.1	Sample Selection and Source of Data Collected	24
2.1	Expenditure in Functions by Source in 13 Latin American Countries	50
2.2	Allocations of Funds under National AIDS Control Programme in India and Karnataka	55
3.1	Dharwad District Statistics at a Glance	73
3.2	Dharwad District health infrastructure	74
3.3	District wise Selected Health Status in Karnataka, 2010	75
3.4	HIV+Cases,AIDS Cases and AIDS deaths in Dharwad District	76
3.5	Sample Size	76
3.6	Expenditure incurred on HIV / AIDS Services collected from the Patients	80
3.7	List of Data Sources	91
4.1	Comparison of India with rest of the countries in the World in some of the Health Status Indicators	97
4.2	Selected Health Status Indicators in Karnataka and India	99
4.3	Selected Health Infrastructure Facilities in Karnataka and India	100
4.4	Health Infrastructure and Human Resources in Karnataka	102
4.5	Public Health Care Institutions in Karnataka	103
4.6	District wise Selected Health Infrastructure Facilities in Karnataka, 2010	104
4.7	The other Health Institution in Karnataka	105
4.8	District wise Selected Health Infrastructure Facilities in Karnataka, 2010	109-10
4.9	Life expectancy at birth in major states	114
4.10	Epidemiological Situation	117
4.11	Filaria Incidence in Karnataka from 2001 -2005	118
4.12	TB Health Care Infrastructure	119
4.13	District wise T.B cases	120
4.14	GE cases deaths due to GE Cases	121
4.15	Dengue cases deaths due to Dengue	122
4.16	Chikungunya Cases	122
4.17	Child Health Programmes in Karnataka State	123
4.18	Selected RCH outcome Indicators in Karnataka and India	124
4.19	District wise Information on Karnataka under some RCH indicators	125

Table No	Table Title	Page. No
4.20	Modes of HIV/AIDS Transmission In Karnataka	134
4.21	District-wise HIV +ve cases, AIDS cases, Death due to AIDS in Karnataka	135
4.22	Nutrition Status 2005	137
5.1	Health Expenditure in Karnataka from 1990-91 to 2009-10	147
5.2	Total Health Expenditure in Karnataka 2004-05	148
5.3	Dharwad District Public Expenditure During 2008-09 (Rs. In lakhs)	149
5.4	Estimated Household expenditures on Health for different Health Care Functions in Dharwad District during 2008-09 (Rs. In lakhs)	150
5.5	Estimated Household expenditures on Health for different Health Care Functions in Dharwad District during 2008-09 (Rs. In lakhs)	151
5.6	Estimated Health Care Expenditure by Source	151
6.1	Present alarming status of the epidemic	155
6.2	Region wise HIV/AIDS Cases and AIDS Deaths in the end of 2008	156
6.3	Risk/Transmission Categories for AIDS in India (As on 31st August2006)	157
6.4	Infrastructure Established under National AIDS Control Programme (As on December 2005)	165
6.5	District-wise current prevalence in different population groups, by source 2005-2010, Karnataka	166
6.6	HIV Prevalence Levels in Karnataka (1998 to 2005)	167
6.7	Distribution of registered HIV Cases at ART centers till March,2009(Percentage total population)	168
6.8	Mapping of High Risk Groups of AIDs in India and Karnataka in 2004	168
6.9	District-wise HIV +ve cases, AIDS cases, Death due to AIDS in Karnataka	170
6.10	Allocation of Funds under National AIDS Control Programme in India and Karnataka	171
6.11	Dharwad District Health Infrastructure	172
6.12	HIV+ Cases, AIDS Cases and AIDS deaths in Dharwad District	173

Table No	Table Title	Page. No
7.1	HIV / AIDS Services	174
7.2	Identification Particulars	178
7.3	Total HIV/AIDS expenditure in Dharwad District 2008-09	187
7.4	Household Expenditure by Health Functions	188
7.5	Health-Non Health expenditure of HIV/AIDS	189
7.6	Household Expenditure by Provider, Dharwad District 2008-09	191
7.7	HIV/AIDS related Expenditure by Financing Source and Health Care Functions (INR Lakhs)	192
7.8	HIV/AIDS related expenditures by KSAPS for Dharwad district for the year 2008-09	194
7.9	HIV/AIDS related expenditures by NGOs for Dharwad district for the year 2008-09	195
7.10	HIV/AIDS related Expenditure by Source of Finance and Financing agents	196
8.1	HIV/AIDS Expenditure of Households by Type	203
8.2	Health and Non Health Per Capita Expenditure of HIV/AIDS by Households (Rs in Lakhs)	203
8.3	Non-Health expenditure by Households	204
8.4	Total HIV/AIDS expenditure in Dharwad District 2008-09	204
8.5	Care and Treatment Expenditure of HIV/AIDS Affected Households in Dharwad District Dharwad District-2008-09	206
8.6	Household Expenditure by Provider, Dharwad District 2008-09	207
8.7	Sources of OOPS to HIV/AIDS by selected patients Household	208

LIST OF GRAPHS

Table No	Names of the Graphs	Page. No
4.1	District wise Epidemilogical Report of Cholera (Attacks) 2004	115
4.2	District wise Epidemiological Report of Gastro-Enteritis-Year 2004(Attacks)	116
4.3	District wise Epidemiological Report of Gastro-Enteritis-Year 2004(Deaths)	116
4.4	Number of HIV Positive Cases in Karnataka-2003-04	136
6.1	Risk/Transmission Categories for AIDS in India	158
7.1	Patients distribution by Area (in %)	179
7.2	Religion Status of the Patients (in %)	179
7.3	Social Status of the Patients (in %)	180
7.4	Type of Family (%)	180
7.5	Household size of The Patient (in %)	181
7.6	Patients and Poverty status (in %)	181
7.7	Period of People Living With HIV/AIDS (in %)	182
7.8	Educational Status of the Patients (in %)	182
7.9	Occupational Status of the Patients (in %)	183
7.10	Patients and Age group(in %)	184
7.11	HIV affected persons pyramid	184
7.12	Domicile Status of Patients (in %)	185
7.13	Total HIV/AIDS expenditure in Dharwad District 2008-09(in %)	188
7.14	Household Expenditure by Health Functions (%)	189
7.15	Health-Non Health expenditure of HIV/AIDS (%)	190
7.16	HIV/AIDS related Expenditure by Financing Source and Health Care Functions (%)	193

LIST OF FIGURES, PICTURES AND CHARTS

Figures and charts No.	Names of the Figures and Charts	Page. No
Chart.1.1	The pattern of flow of resources for the health sector in India	4
Chart.1.2	Links Between Health and Income	6
Chart.1.3	Conceptual framework for the impact of the HIV/AIDS epidemic on the Health Sector	7
Chart.1.4	General Pattern of Health Financing in India	10
Chart.1.5	Fund Flow Mechanism For HIV/AIDS in Dharwad District	25
Picture.1.1	Structure of HIV Virus	30
Map 3.1	The Dharwad District	71
Figure 3.1	Boundaries of NASA	84
Figure 3.2	Gathering, Compiling and Cross Checking Information From Three Sources	85
Figure 3.3	Schema of Entities in HIV / AIDS Accounts	86
Chart 3.1	Health Care Actors and Activities	87
Chart 3.2	Expenditure boundaries of a NHA HIV/AIDS Sub Analysis	89
Chart 5.1	Referral System in the Public Sector Health System in Karnataka	141
Chart 5.2	Administrative Structure of Department of health in Karnataka	142
Chart 5.3	Organizations and Reporting Structure of Healthcare Systems in India	143

LIST OF ABBREVIATIONS

AIDS	Acquired Immune Deficiency Syndrome
ANC	Ante Natal Care
ANM	Auxiliary Nurse Midwife
ART	Anti Retroviral Therapy
ASHA	Accredited Social Health Activist
AWW	Anganwadi Workers
BCC	Behavioral Change Communication
CBO	Community Based Organisation
CCC	Community care centres
CD4 Test	A CD4 percent, or a CD4/CD8 ratio is used to help evaluate and track the progression of HIV infection and disease
CHC	Community Health Centre
CMV	Cytomegalo Virus
CSO	Civil Society Organizations
CSW	Commercial Sex Worker
DAPCU	District AIDS Prevention and Control Unit
DHM	District Health Mission
DIC	Drop in Centre
DNA-pcr	Deoxy ribo Nucleic Acid Polymerase Chain Reaction
DOT	Directly Observed Treatment
DOTS	Directly Observed Therapy Short Term
DRP	District Resource Person
EAG	Empowered Action Group
ELISA	Enzyme-Linked Immunoflourscent Assay

EOI	Expression of Interest
GP	Gram Panchayat
HB Test	Haemoglobin Test
HB SAG	Hepatitis B surface antigen
HCP	Health Care Professionals
HIV	Human Immunodeficiency Virus
HRGs	High Risk Groups
HRIs	High Risk Individuals
ICDS	Integrated Child Development Scheme
ICTC	Integrated Counseling and Testing Centers
ICTC	Integrated Counselling and Testing Centre
IDU	Injecting Drug User
IEC	Information Education Communication
KASAPS	Karnataka State AIDS Prevention Society
KHPT	Karnataka Health Promotion Trust
KS	Kaposi's Sarcoma
LW	Link Workers
MoHFW	Ministry of Health and Family Welfare
MoHRD	Ministry of Human Resource Development
Monogamy	Monogamy is the custom or condition of having only one mate.
MoYAS	Ministry of Youth Affairs and Sports
MPW	Multi Purpose Health Worker
MSM	Men who have Sex with Men

NACO	National AIDS Control Organization
NACP	National AIDS Control Programme
NFHS	National Family and Health Survey
NGO	Non-Government Organization
NIPCCD	National Institute for Public Cooperation and Child Development
NRHM	National Rural Health Mission
OI	Opportunistic Infection
OPD	Out Patient Department
OVC	Orphans and vulnerable children
PCP	Pneumo Cystis Pneumonia
PEP	Post Exposure Prophylaxis
PHC	Primary Health Centre
PLHIV	People Living with HIV/AIDS
PML	Progressive Multifocal Leukoencephalopathy
PPE	Personal Protective Equipment
PPTCT	Prevention of Parent To Child Transmission
PRI	Panchayat Raj Institution
RCH	Reproductive and Child Health
RHS	Rapid Household Survey
RNTCP	Revised National Tuberculosis Control Programme
RRC	Red Ribbon Clubs
SACS	State AIDS Control Society
SACS	State AIDS Control Societies
SC	Sub Centre

SC	Scheduled Caste
SCM	Syndromic case management
ST	Scheduled Tribe
STI	Sexually Transmitted Infection
TB	Tuberculosis
TI	Targeted Interventions
TIP	Targeted intervention programme
TRI	Technical Resource Institutions
VCTC	Voluntary Counselling and Testing Centre
VDRL	A blood test that is used to determine whether one has an active syphilis infection.
VHSC	Village Health and Sanitation Committee
WBC	White Blood Cell
WHO	World Health Organization

CHAPTER - I

Introduction

Economists have conventionally believed that increased wealth leads to better health, and have largely overlooked the reverse link there of India had adopted the goal of Health for All by the year 2000 A.D. It is now obvious that there is still quite a long way to go before that goal is achieved. Presently new targets have been set forth as Millennium Development Goals to be achieved by the year 2020. These goals have been reiterated in the National Health Policy of 2002 that has been already adopted by the Indian Parliament. The country has been spending significant amounts of its resources for the provision of health and medical care services, but there is still a large demand – supply gap accompanied by problems of inequitable access to facilities and a virtual absence of low-cost risk-pooling mechanisms for the poor and vulnerable groups of the population. There is a growing realization among administrators and researchers that a major cause of implementation slippages of the policy proclamations relate as much to **the problem of non-availability of useful data as to the non-use of available data on the health sector**. In other words, pronouncements of desires have not been supported by suitable informational structures and databases for effective health sector governance in India. In such a context, health sector accounting is visualized as a tool for efficient governance. By facilitating greater transparency in the flow of resources from sources to uses, health sector accounts enabie health sector managers to get a clear idea about the incidence and impact of targeted policy interventions. Further, the dynamic benefits from health accounting flow in the form of critical informational inputs to policy makers for appropriate molding of health delivery systems taking into account budgetary innovations, structural and health sector reforms, decentralization of governance, equity and gender interventions, disease burdens, risk pooling and health sector research requirements.

1.1About Health Accounts & Disease Specific Accounts:

Every one wishes to be away from disease, disability and premature death. Substantial evidence is now available regarding the fact that good health is an important contributor to economic growth in any nation. In this background both policy makers and researchers have recognized the importance of investments in health. Public spending on health and education bring about a change in incomes among the poor. Such investments also seem to be the major determinants, which would contribute to the better health status of the community. Such an outcome also depends on equitable sharing of provision of health services coupled with life-enhancing activities such as nutrition and education. Therefore, the role of government is very important in order to achieve better health in a country like India. As per the Constitution of India, the provision of health care by the public sector is a responsibility shared by State, Central and local governments, although it is primarily a State responsibility in terms of service delivery.

A careful understanding of financial flows of the health sector seems to have emerged as an important policy tool in the recent times. The earlier attempts in developing countries were restricted to the estimation of health expenditures from the public sector only. This was obviously due to data limitations experienced in such countries. In the light of the limited availability of resources to the health sector a judicious use of resources assumes utmost significance. To have a comprehensive picture about health expenditure we must take into account not only public sector spending but also private sector contributions in this regard. This gives us a form of accounts for the health sector, which may be the national health accounts.

Both national income accounts and national health accounts are similar, in the sense that what national health accounts describe for the health sector is being done by national income accounts for the economy as a whole. Both these estimates agree to the fact that money payments or transfers should not be double counted and a distinction to be maintained between capital and current

expenditures With regard to the health sector, the national health accounts is a recent addition and in most of the developing countries the efforts are still in infancy. Some studies have indicated that the methodology adopted for the estimation of national income accounts may not act as a useful tool for the national health accounts. (Foulon 1982,Petre 1983). It is argued that the categories adopted in the estimation of national income estimates may not be useful for health sector analysis. This may be due to the fact that it is difficult to define what the constituents of health sector are? The confusion gets confounded due to the fact that the framework of national income accounts focuses mainly on tangible activities rather than on services like health.

In the present day context health accounts are in the process of development across the globe. The need for such an accounting has risen due to increased complexity of health care systems and the need to keep track of the resources of the health sector per se.

Health accounting is still in its infancy stage in India and research in this field is still on the learning curve. In comparison, many developed countries have well-established systems for generating health sector accounts and linking them with institutionalized processes of policy formulation.

Unlike many of the EU countries, India currently lacks systematically compiled information about the flow of funds in the health sector. The basic purpose of the study is to develop systematically designed HIV/AIDS Accounts using NASA methodology which is recently designed by UNAIDS.

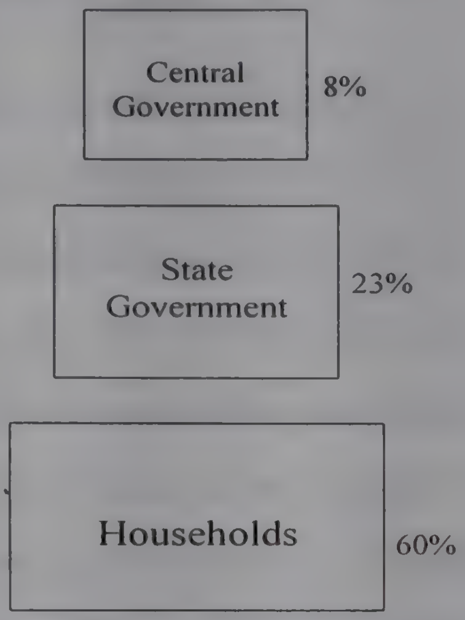
1.2 Rationale of the study:

If the achievement of 'Health for All' is based on the Alma-Ata philosophy of primary health care; under the existing resource base we need to search for innovative methods for the best use of available resources. Apart from this, even the extent of available resources in a given region needs to be

analysed for its effectiveness, an exercise which would help in planning of health service development in future.

The pattern of flow of resources for the health sector in India resembles the following picture.

Chart 1.1



Source: Adapted from Berman Peter (1991)

Note: The squares represent major source of funds approximately proportional to their relative size of contribution. The figures do not add up to 100 per cent due to the fact that other minor shares from corporate bodies and local governments have not been depicted in the picture

People often spend more from their own pockets on health care than their governments do on their behalf. For example, out-of pocket expenditure on health as percentage of total expenditure on health was 67 percent in 2002 (WHO, 2005). In reality expenditure by individuals and households accounts is a part of total financial resource flows on health. Since the existing information on general income and expenditure is not adequate to measure health expenses, this kind of study provides information on resource flows related to HIV/AIDS in the public and private sector in the district. The findings of the study such as this are highly useful in tracking the health sector reforms and developing social welfare policies.

If this is so one may ask the basic question of why there is a need to spend on health by the Government. The simple answer is that HEALTH is a

MERIT GOOD if go by the Musgravian concept. Thus, one can say that spending on health is so meritorious to the society that it provides positive externalities to the economy at large. The gains to the individuals and the society would warrant such expenditures. The following discussion highlights such a vies as reflected in the literature.

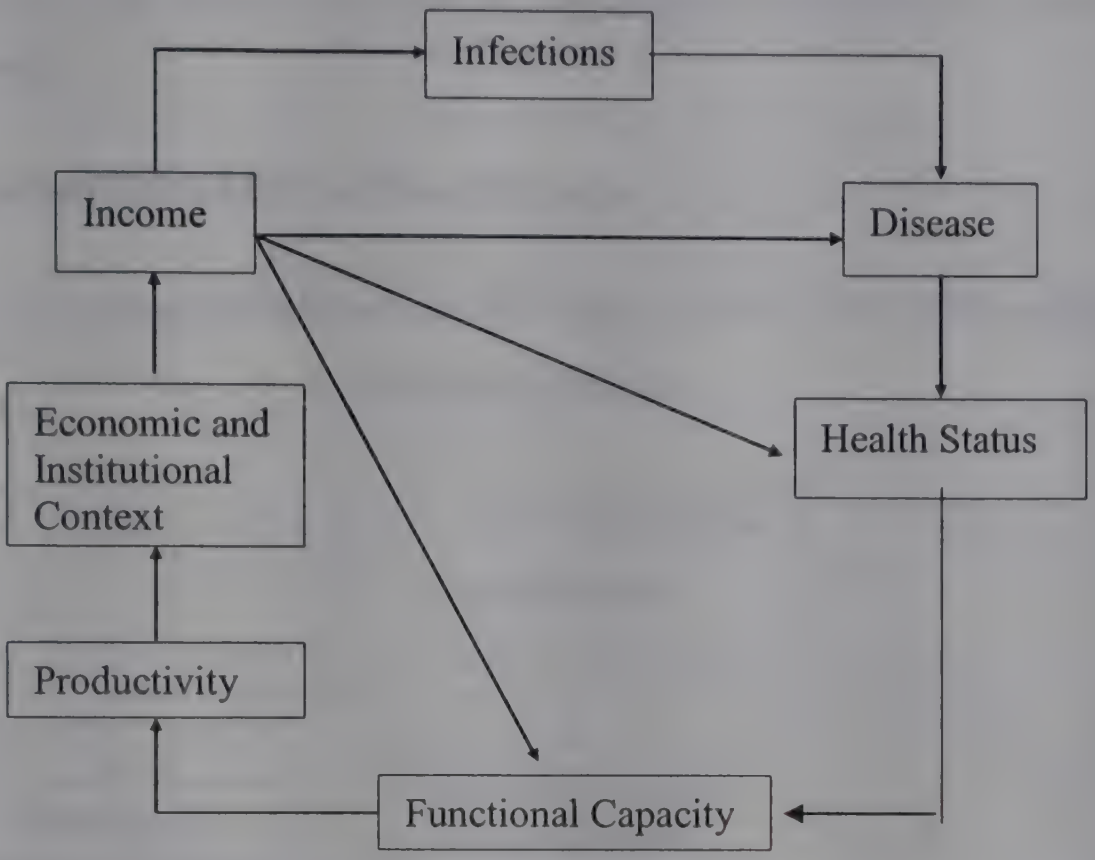
1.3: Why Spending on Health is Important? View from the Literature:

As India is a signatory to the Alma-Ata declaration there is a need to evolve such policies, which would strive to achieve the health for all goals. In this context it would also be essential to look at the intra sectoral priorities with regard to resource allocation. In order to do so the policy-making machinery is required to have basic information regarding the needs of the health sector and ways and means of assigning priorities to such needs. The concepts like DALY and QUALY of the recent past tried to evolve such methodology and paved the way of restructuring public health spending to achieve greater effectiveness from such spending.

Conceptually the literature had produced the evidence about the linkage between better health status and income which would eventually lead to better economic development. The following diagrammatic representation would depict the importance of health and its effect on income.

Chart 1.2

LINKS BETWEEN HEALTH & INCOME



Source : Feachem R.G.A. et al. (1991), *The Health Status of Adults in Developing Countries*, Human Resource Department, The World Bank, Washington DC

In view of the above discussion the study would assume significance as it intends to track the resource flow to HIV/AIDS segment within the broad domain of Health Sector.

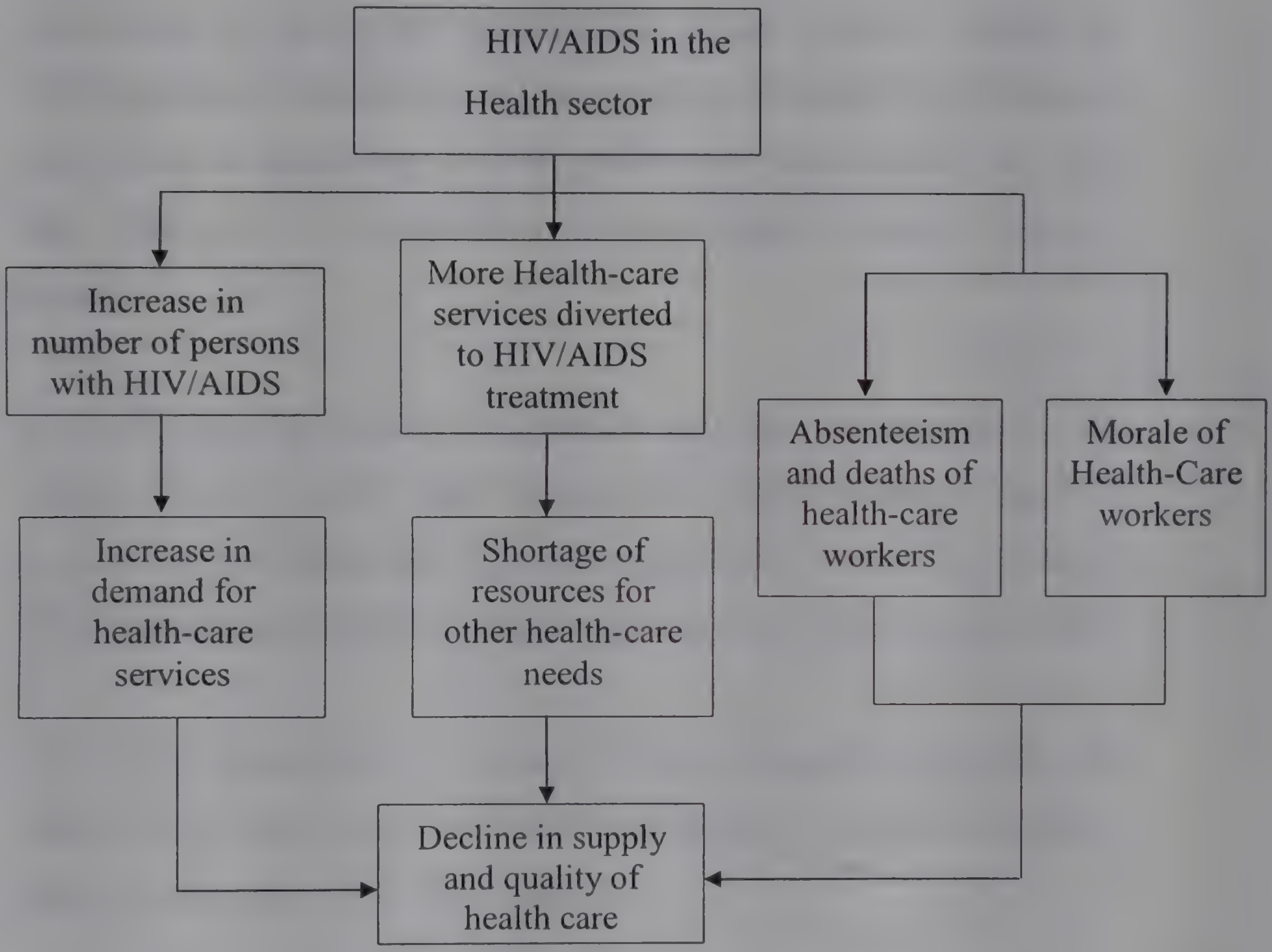
1.4: Impacts of HIV/AIDS on Economic Development

UNAIDS estimated that household production could drop anywhere between 30%-60% due to an AIDS death in the family. Another study from the Ivory Coast examined what implications this could have on other aspects of the families' lives. It was estimated that "families with a member suffering from AIDS cut spending on their children's education in half and reduced food consumption by about 40 percent as they struggled to cover health expenditures that soared to four times their usual level." Unfortunately this leads to a vicious cycle as these countries are often already experiencing higher malnutrition rates and lower education levels.

Many countries have experienced a decline in the quality of work in the industries due to the ill health and absenteeism. The spread of HIV/ADIS has taken its toll in this respect. As a result, the country experiences a much lower rate of growth.

1.4.1: Impact of HIV/AIDS on Health Sector

Chart 1.3. Conceptual framework for the impact of the HIV/AIDS epidemic on the Health Sector


HIV/AIDS in the Health sector
Increase in number of persons with HIV/AIDS
More Health-care services diverted to HIV/AIDS treatment
Absenteeism and deaths of health-care workers
Morale of Health-Care workers
Increase in demand for health-care services
Shortage of resources for other health-care needs
Decline in supply and quality of health care

Source: United Nations, Department of Economic and Social Affairs, Population Division.

Especially in the most severely affected countries, HIV/AIDS increases overall health expenditures for both medical care and social support. At the same time it is claiming the lives of doctors and nurses in the developing countries. The present chapter presents a conceptual framework for the impact of HIV/AIDS on the health sector. It then reviews some of the empirical findings concerning the effects of HIV/AIDS on the health sector.

HIV/AIDS may affect the health sector in a number of ways

- First, health workers themselves may be infected with the HIV virus, and this will affect the supply of public health services. Health workers are vulnerable to the same routes of infection as the general public; however, they may also contract the HIV virus or other infections associated with AIDS, such as tuberculosis, through contact with AIDS patients.

- The morale of the health professionals is also affected. Caring for AIDS patients is demanding and stressful for the health staff involved. High levels of stress may lead to greater staff absenteeism, and staff may refuse to be transferred to high-prevalence regions within a country.

- In some cases the quality of services may also be affected by the attitude of the health staff towards HIV/AIDS patients. Fear of contracting the disease and the psychological stress involved in treating AIDS patients may lead to a decline in the quality of services provided.

- HIV/AIDS contributes to increase in health expenditures in both the public and private sectors and may divert resources towards the higher levels of care needed for AIDS patients.

- The added strains on public health finances, staff and other resources may force more people to seek private healthcare. Many households may have to choose between health care and other essentials such as food.

If one tries to mitigate such effects which have far reaching implications, the need is felt to look into the financing aspect of the disease.

1.5: Focus of the Study

Tracking the flow of resources using the Health Accounting tool would be of much help in fine tuning the policies for the betterment of patients in question and society at large. In this background we will consider the both institutional mechanism of health financing as well as empirical issues therein.

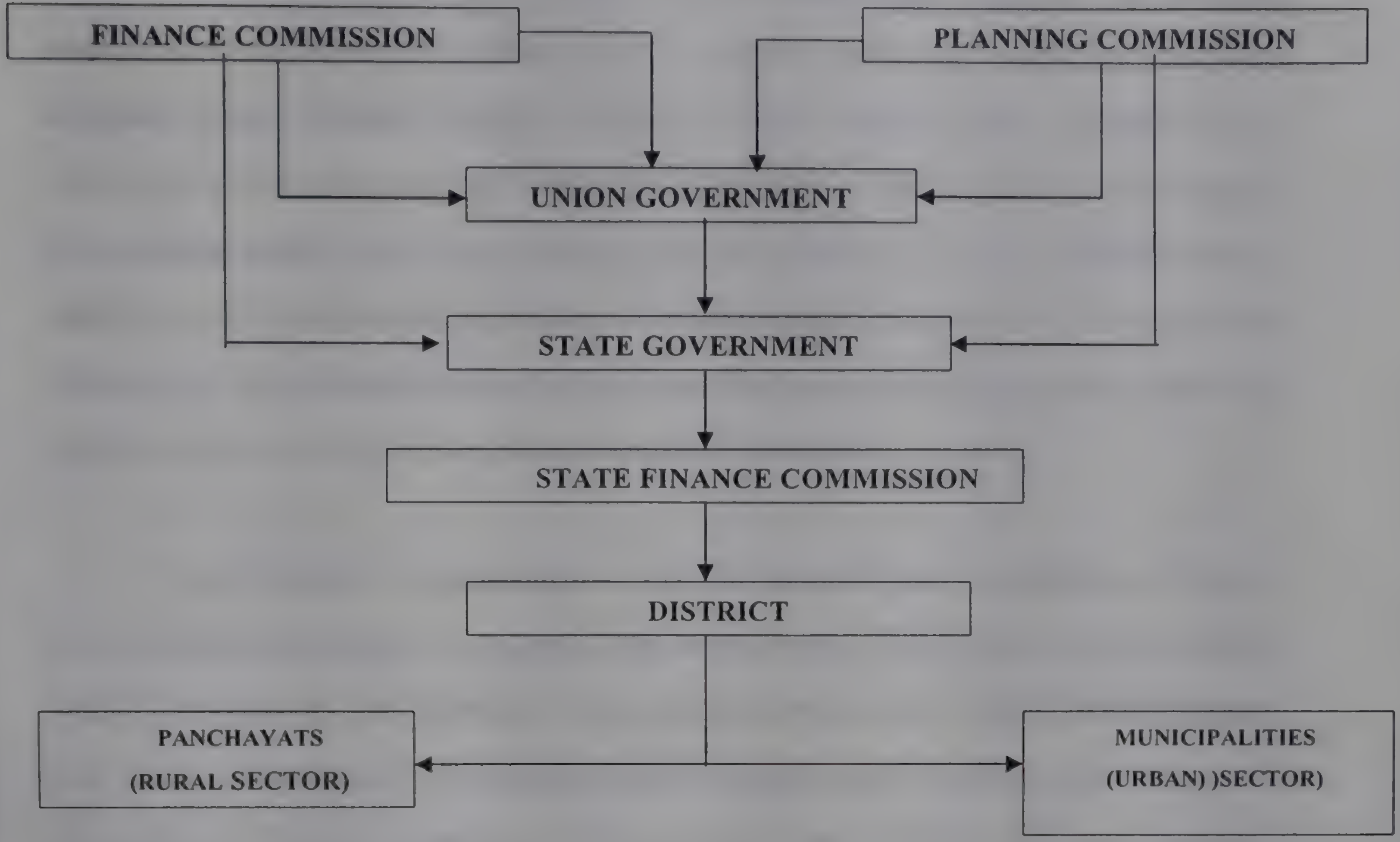
1.5.1: Financing Mechanism of Health in India

Public sector is not the major player, as far as financing of health in India is concerned. For example Union and State governments account for about 20 30 per cent towards flow of resources for health, local governments account for about 2 - 4 percent. Health is a state subject and the union government takes positive initiative giving broad guidelines for the development of the entire health sector. Earlier the district level governments were not constitutional or statutory units, but they have received constitutional mandate as a result of the 73rd constitutional amendment. Thus the financing aspect has to undergo one more channel to ultimately reach the end users of the funds at the micro level. The overall sharing of resources takes place between the Union government and the federating units by the Planning Commission (transfers the plan resources) and quinquennial body of Finance Commission (transfers the non plan resources). Plan resources would finance various plan initiatives, whereas the non-plan resources would meet the committed expenditures arising out of plan activities. The intra state distribution of resources is taken up by the state level Finance Commissions that distribute resources to the districts in the states of India.

The following diagram depicts flow of public resources to the Health in India, which also includes primary Health.

Chart 1.4

General Pattern of Health Financing in India



Apart from above outlined public flows of resources to the health sector in India, the other finances flowing to this vital sector are,

- Household expenditure
- Private providers of health (including both for profit and non profit)
- External funding for health

1.5.2: Operational Issues in Health Planning and Financing

In the case of the Health sector for example, the exercises of the Health division, reports of the working group relating to the Health sector, the panel discussions with the experts, the deliberations of the consultative committee relating to the Ministry of Human Resources Development, etc. provide the necessary analytical input for formulating the Health sector plan. The State Governments are required to send the estimated requirements of the Health sector within their geographical jurisdiction. The Health Secretary of the State

Government in turn is expected to develop an outline of priorities and an estimate of the financial requirements on the basis of the information that he receives from the directorate of Health services in the State. The Directorate of Health Services in turn would develop an outline based upon the information received from District Health Offices, which would have compiled the information from the various units in the rural areas. The Ministry of the Local Government at the state level collects the information about the Health sector priorities, of the urban local bodies. Unfortunately, in some of the states this information is not integrated with the over all state level Health sector plan and the financial estimate for the Health sector of the state.

The Planning Commission conducts discussions at different official levels before preparing the sectoral and state plans. The Health Secretary and Health Advisor in the Planning Commission prepare the draft Health sector plan with a statement of resource requirements and inter-se priorities and allocations. Similar exercises of discussions are held for different sectors. When the sectoral plans are integrated for a given state, the Deputy Chairman, Planning Commission, and the Chief Minister of the State hold discussions. The Sectoral Plans and the State priorities are thereby decided through the discussions where the political forces may play their role. These sectoral allocations and overall plan size for each state may turn out to be different from the ones arrived at through the working group exercises or through the subject division discussions between the State and the Planning Commission officials.

The individual state plans and the over all plan for the country are approved by the National Development Council (NDC) wherein the Chief Minister of the State and some of the Ministers of the Center happen to be the members with the Prime-Minister presiding over. The NDC approved plan is thus a final plan for the state and the Center.

This description of the procedure followed in determining the sectoral plan would indicate that the planning exercise for Health sector is both a

scientific exercise to some extent and to a very significant extent a political exercise consisting of negotiations, bargaining and discussions. It is interesting that the State Government officials initially present large size Health sector plan in which they also indicate the availability of resources. The Planning Commission on the other hand, would be tempted to scale down the Health sector plan of the State Governments indicating that the state does not have adequate resources to finance the large Health sector plan. In order that the State Government gets the approved plan closer to its internally decided Health sector plan, the state officials initially inflate the plan size. The Planning Commission therefore, does not accept the State Government estimates and hence slashes the plan size. This reflects mutual distrust and mistrust which is the commonly observed phenomenon in the case of any bargaining process in the background of the resource constraints. This process of initial over estimating and final slashing down etc., however, may weaken the federal framework. Interestingly, the extent of distrust and mistrust by the Planning Commission is not uniform for the states. This might affect some sectors and some states more adversely.

The Finance Commission's work begins where the Planning Commission's work ends. This is because the programmes newly introduced in a particular plan are treated as out side the plan or as 'non-plan', after the completion of the particular plan period. In order to continue the non-plan programmes the different departments of the central and the state governments require additional funds, which are, called the non-plan resources or the maintenance needs. The Finance Commission is concerned with the needs of the center and the state with regard to the non-plan account of different sectors. For example, if a public school is built as a part of the 9th Five Year Plan, the running of the same school becomes a non-plan item during the 10th Five Year Plan. The expenditure needs of such a school during the 10th five-year plan period have to be met through the non-plan grants recommended by the Finance Commission. The Finance Commission does the exercise of assessing the non-plan needs of the State Government in a similar way as in the case of

plan needs by the Planning Commission. An interesting feature of the exercise of estimating the plan and non-plan requirements needs to be noted. Thus, while submitting their proposals before the Planning Commission the state governments are likely to over- estimate their resources position, because, they are interested in having a large size plan which is possible only if the state government convinces the Planning Commission about its capacity in mobilizing resources. However, in assessing the non-plan needs the state governments invariably under-estimate their non- plan resources because till recently the Finance Commission grants were based upon the gap filling approach. This approach consisted of estimating the non-plan resources and the non-plan expenditures. The gap between the expenditures and the resources was required to be met through article 275 grants recommended by the Finance Commission. From the experience of the working of Centre-State financial relations it appears that monitoring of the plan programmes and the expenditure according to the schemes is much better as compared to the monitoring of the non-plan expenditures of the State and the Central Governments. It is for this reason that some of the sectors continue to be experiencing shortages of resources because the allotted resources particularly, on non-plan account are diverted to other 'priority' sectors. More often the sectors which suffer this type of *'resource deprivation due to resource diversion'* are the items in the social sector namely Health.

The Health sector planning at the decentralized levels of the districts and the village level governments follows similar procedures though there may be minor variations across the states. Since the governments at the decentralized level do not have a significant own resource-base the planning exercise at the decentralized level becomes largely unidirectional in the sense that the programmes decided at the state head quarters and the financial flows from the state to the local level governments would determine the plan and the priorities at the local level. There does not seem to be a high degree of correspondence between the needs expressed at the decentralized level and the programmes implemented. (Aziz Abdul 1993)

In the Health sector, centrally sponsored schemes (CSS) also play a significant role. The programmes, which have, inter state implications are necessarily managed under the Central Government initiative. The centrally sponsored schemes have different patterns of financing with the sharing of financial responsibilities between the Center and the State. This suggests that the state would have to necessarily divert some of their resources for meeting their share against different centrally sponsored programmes.

The treatment of Health in our federal framework has a bearing on the legacy of the British rule. Union government, State government and the Local governments carry out the provision of resources to Health in the Indian context. In the recent past external funding of Health has gained prominence. Thus various layers in our federation would be influencing the provision of Health services. Thus, the implications of such provision of resources to Health become crucial in addressing the issues of disparities of Health development across the states. In this background the present study makes a modest attempt in understanding the implications of the federal financing of Health with regard to the state of Karnataka in the Indian union.

The discussion above brings out the fact that the federating units will have to depend on the Union government for resources in general and for Health including primary Health in particular. Planning Commission gives resources for the plan schemes and the Finance Commission would take care of the non-plan committed expenditure needs of the states. Thus, the federal mechanism is likely to influence the provision of Health services at the state level. At the district level the responsibility of managing Health rests with the decentralized set up. In this background the ensuing discussion tries to present the issues as well as empirical aspects related to the process of decentralization and their implications for primary Health.

In continuation of the above discussion, the following issues would be relevant in understanding the financing component of HIV/AIDS financing in the Indian context.

1.5.3: Empirical Issues of Health Financing in India

World Development Report 1993 has stated that the private sector in India has more than 50 percent share in the health care delivery system of the country. However some of the Indian studies, which have addressed to this issue have come out with estimates of much larger share for the private sector. Survey findings on utilization patterns indicate the high dependence of health care seekers on the private sector (Duggal and Amin 1987). The study by Chatterjee (1988) has indicated that despite widespread infrastructure, a higher proportion of health service is provided by the private sector than by the government facilities. Jesani and Anantaram (1989) estimate that private sector accounts for as much as 70 percent of the total health expenditures in the country. The same estimate was to the tune of 82 percent from a district of Maharashtra (Duggal and Amin 1989). A study by IIM Ahmadabad in 1987 estimated this to be around 63 percent. The message that emerges from this is that the presence of private sector is quite significant in the health sector of our economy. This fact is even substantiated by the NCAER study (1992), which estimated that 55 percent of the illness cases received private treatment.

The recent attempts, which have tried to analyze health care financing in the Indian context, do provide some basis for the compression of resources through public sources. A paper by Seetha Prabhu (1999) tries to show that; the series of measures being implemented in the economy with IMF-World Bank assistance have affected union government finances. There seem to be two different phases in the response of the union government. First, comprising the first two years of adjustment, when the government was seriously concerned with reducing the fiscal deficit, and second, the subsequent two years when, the

fiscal discipline was lax. The data presented in the paper does not cover the subsequent periods of the current reforms.

No doubt, there has been an increase in central government revenue expenditure on social sector, but its share in total revenue expenditure has declined in the first two years of adjustment and subsequently it has increased its share (Seetha Prabhu, 1999). She also finds that the structural adjustment programme being implemented and consequent fiscal compression at the central government level have further affected the finances of state governments. Her findings show that states have suffered on account of deceleration of tax revenues, and plan and non-plan grants from the central government. The stringency in finances of the states has usually led to deceleration in social sector expenditure in general and real per capita health expenditure.

Kadekodi (CMDR Monograph No. 38) while discussing about the status of Medical Care in India observes that, the Central budgetary allocations in real terms have not been reduced in health sector, be it at per capita level, or per GDP or even as a total revenue budgetary allocations. However he observes that states' budgetary allocations have declined as a share out of total revenue budget, and in terms of per capita seem to be going up very slowly.

Rama Baru (1999) has tried to examine the health sector scenario using the 42nd round of NSSO data during the year 1989. Her paper shows that, in economically backward states like Bihar, Orissa and Uttar Pradesh, there has been very little growth of hospitals in rural areas. In few states like Kerala, Maharashtra, Gujarat and Andhra Pradesh there is a higher proportion of institutions and beds in the private sector. Based on the NSSO data she concludes that majority of non-government institutions are located in urban areas. She also concludes that it is the relatively more developed states that have a higher concentration of private and voluntary services. But in majority of the states including the backward states, public sector continues to be the

major provider of services especially in the inpatient care. Her findings show that poor people utilize public institutions in Karnataka and Maharashtra, while rich people utilize public facilities to a greater extent in the state of Orissa. Thus, she calls for the continued support of public health services without making any financial cuts on them, because, evidence shows that with the cut back of public services, the private and voluntary sectors will not immediately move in to fill the gap.

Krishnan T.N. (1999) also analyzes the NSSO data for the years 1986 and 1992, while examining access to health and burden of treatment. His findings show that, at the all India level, 60 per cent of the inpatients get treated at government health care institutions. The proportion is similar in both rural and urban sectors. Broadly speaking about 80 per cent or more of inpatients receive treatment from public health care system in the less developed states while the corresponding proportion is 40 per cent in the more developed states. Private health care institutions account for a much smaller proportion of illness treated in backward states. For example percentage of patients treated in public hospitals for rural areas in Maharashtra is 40 per cent, about 50 per cent in Karnataka and in Orissa about 90 per cent. The respective figures for urban areas are 42, 43 and 80. He concludes that, cost and burden of treatment are closely tied to access to health care and cost of treatment and growth of public health infrastructure are inversely related. Burden of treatment seems to be higher for the poor. Increase in BPL population across the states especially in rural areas puts greater burden on the families on account of morbidity. Thus, he also cautions against privatization of health care services in the Indian context.

We may observe from the above discussion that, there seem to be a declining trend with regard to the public resources towards health sector, and greater dependence of poor people on public health services. Thus, there seems to be a demand for enhancing the public role in the delivery of health care services. In this background the following issues would be relevant for the present study.

If the above discussion is relevant for the health sector in general what is the position of financing as far as HIV/AIDS segment is concerned? First of all we will consider the why there is a need of tracking the resource flows for HIV/AIDS and then we will see what mechanism that exists in the Indian context that oversees the financing mechanism.

1.6 Statement of the Problem

1.6.1: Why HIV/AIDS Accounts?

Health Accounts are on the learning curve in most of the developing countries. Contrary to this most of the European countries and few countries in the American continent have produced health accounts. Though India did produce its Health Accounts very recently, more distance needs to be covered at the state level. The disease specific health accounts are considered to be more useful as a policy tool for bringing in corrective measures as regards the financing of disease specific interventions. The conceptual clarity of developing such accounts are also in infancy in most of the developing countries due to the fact that the OECD model of System of Health Accounts (SHA) as well as the Producers' Manual of Health Accounts (WHO, USAID & World Bank) cannot be easily adopted and adapted in the context of developing economies. In this background the study assumes significance due to the fact that it is an in-house and pioneering exercise to develop and understand the conceptual as well empirical issues in developing disease specific health accounts. The study would be useful for the academicians and the managers of health sector in the years to come.

Health Accounts basically try to track the flow of resources for health (in this case it is for HIV/AIDS) using the System of Health Accounts (SHA) as developed by OECD. SHA basically draws from the wisdom of the System of National Accounts (SNA) which is the tool for developing National Income estimates.

Recently, UNAIDS came out with its own framework of developing HIV/AIDS Accounts in the form of National AIDS Spending Assessment (NASA). The study also makes use of this framework which is applicable to the specific needs of HIV/AIDS across the countries. An attempt is made to adopt and adapt this framework to the conditions at the district level in the Indian union. In sum we can say that the following issues would be relevant in developing the HIV/AIDS Accounts.

- A careful understanding of financial flows of the health sector seems to have emerged as an important policy tool in the recent times.
- In the present day context health accounts are in the process of development across the globe. The need for such an accounting has risen due to increased complexity of health care systems and the need to keep track of the resources of the health sector per se.
- With many problems competing for public sector budgets, governments need guidance on where to devote their resources. Businesses may also need to adjust their strategies to respond to the problem.
- In reviewing all the available evidence, UNAIDS states that "despite incomplete data, there is growing evidence that as HIV prevalence rates rise, both total national income and growth in national income fall significantly.
- There are several ways in which individual households are likely to be economically affected by AIDS. The expenses incurred by households with a member infected with the virus are the most visible impact. Bloom and Mahal (1996) and Bloom and Glied (1993) examined the annual treatment costs of HIV/AIDS in nine Asian countries in the mid-1990s and concluded that in most cases, these costs were more than twice the country's per capita income. For

example, the ratio of treatment costs to per capita income was 2.4 in Indonesia, 2. 2 in the PRC and India, and 1.5 in Sri Lanka. The cost estimates by Bloom and Mahal did not include the costs of anti-retroviral (ARV), which are likely to further increase the economic burden on families and households.

1.7: Need for the Study

One of Millennium Development Goals is to combat HIV/AIDS by stopping and reversing its spread and providing universal access to drugs for those infected. While this is definitely a worthwhile goal, this is because the impact of HIV/AIDS on the economy can be substantial as discussed above..

Acquired immunodeficiency syndrome (AIDS) is a calamity of the new millennium, similar to plague and smallpox that devastated mankind in the Middle Ages. Like leprosy in the bygone centuries, human immunodeficiency virus (HIV) infection is also associated with social stigma. This is a challenge that goes beyond public health, raises fundamental issues of human rights, and threatens human achievements in many areas. AIDS ranks fourth among the world's top killers of mankind. Tuberculosis, respiratory tract infections, and malaria are among the top three killers. AIDS has killed more than 25 million people since it was first recognized in 1981, making it one of the most destructive epidemics in recorded history (UNAIDS/WHO, 2005). In this context we also need to quantify the resource flows to HIV/AIDS control and management.

Health accounting is still in its infancy stage in India and research in this field is still on the learning curve. In comparison, many developed countries have well-established systems for generating health sector accounts and linking them with institutionalized processes of policy formulation. India currently lacks systematically compiled information about the flow of funds in the health sector. The basic purpose of the study is to develop systematically designed

Flow Funds of HIV/AIDS Accounts using NASA methodology which is recently designed by UNAIDS.

1.8 Grey Areas of Research in Disease Specific Accounts

From the discussion above it seems that the efforts of developing Health Accounts in general and disease specific Accounts in particular are not explicitly evident in the Indian context. This is more so in case of a disease like HIV/AIDS. The present study would make a modest attempt in plugging this research gap. In this context the study would be useful not only for academicians but policy makers at large.

1.9: Research Questions

In this connection the following research question have been raised:

- What is the extent of resource envelop for the Health Sector at the level of state and district?
- What is the institutional mechanism of health spending in the state and at the district level?
- Is it possible to sketch and map the HIV/AIDS segment both at the state and district level?
- Who are the different Actors, Activities and Transactions in the provision of HIV / AIDS care?
- How much of resources would be spent on HIV/AIDS in a given region

With a view to find answers for the above stated questions, the study would address the following objectives.

1.10: Objectives of the study:

- To examine the overall health care spending by public and households in the state of Karnataka through different studies and to figure out the position of Dharwad district in the overall scenario.

- To sketch the overall funding mechanism of health services in the Dharwad district.
- To present the HIV / AIDS scenario of Dharwad district in comparison to that of the state
- To identify different Actors, Activities and Transactions in the provision of HIV / AIDS care
- To identify all sources and uses of financial flows for HIV / AIDS in the context of overall health system spending
- To develop HIV / AIDS Accounts for Dharwad district using the internationally accepted National AIDS Spending Assessment (NASA) methodology which is used to determine a nation's overall health spending patterns

The above stated objectives would be addressed using the following methodology.

1.11: Methodology

1.11.1: a. Coverage

Dharwad district has been selected randomly out of 30 districts in Karnataka. In this district a total of 349patients who were selected randomly were surveyed and the availability factor as well as accessibility factor played important role in the selection process. It was really difficult to identify the HIV/AIDS patients in the district. However with the active support and co-operation of the NGOs and a few socially committed Doctors who manage these patients it was possible for us to make a dent into the domain of People Living with HIV/AIDS (PLWHA). We also approached service proving institutions. There, we talked to all the patients visiting the institute and asked whether he/she is an affected person residing in Dharwad district. The reported persons who are willing to provide the information have been selected for getting detailed information about spending pattern. Methodology has been discussed in detail in Chapter III.

1.11.1 b. Data Source:

The study largely depends on both primary data and secondary data

1.11.1 b.1. Primary data:

1. Patient / affected person Survey to elicit how resources are being spent in the form of Out of Pocket Spending (OOPS) on HIV/AIDS
2. Case studies: to get the in-depth study of the affected persons
3. NGO Survey to get the nature and quantum of expenditure relating to HIV/AIDS
4. Data from service providing institutions in the district
   a) Parastatal hospitals (hospitals managed by different departments, such as , KSRTC, Railway and Police)
   b) Private clinics
   c) Primary health centers
   d) Voluntarily counseling and testing centers
   e) Prevention of mother to child counselling and testing centers
   f) Clinical laboratories and diagnostics centers
   g) Anti retroviral therapy centers (ART)

1.11.1 b.2. Secondary Data:

The major task of using the budgetary expenditure data relating to any line items in the budget poses a typical conceptual problem. As the state government makes expenditure for the state as a whole it would be difficult to cull out the district specific proportion from the main pool. In order to overcome this issue we had collected secondary data from following sources.

1) Karnataka state AIDS prevention society (KSAPS), Bangalore.
2) Karnataka health promotion trust (KHPT), Bangalore.

Table No:1.1 Sample Selection and Source of Data Collected

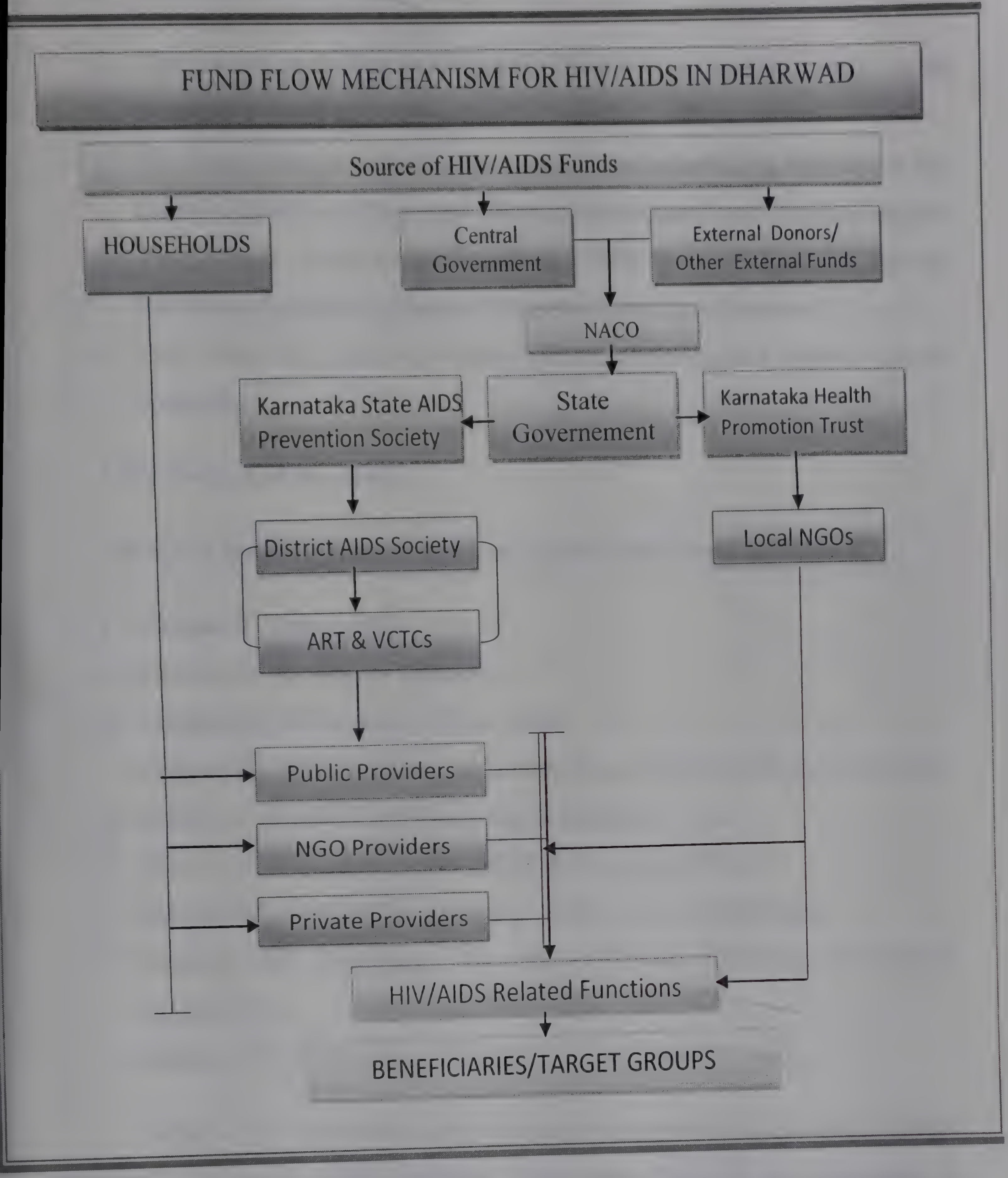
Sl No	Sources of Data Collection	Sample size
1	Patient / affected person Survey	349
2	Case studies	15
3	NGOs	5
4	Parastatals hospitals	3
5	Private clinics	2
6	Primary health centres	2
7	Voluntarily counseling and testing centres	3
8	Prevention of mother to child counseling and testing centres	2
9	Clinical laboratories and diagnostics centres	2
10	Anti retroviral therapy centres (ART)	1

1.11.2: Estimation Method:

The sample data collected from the HIV/AIDS patients, NGOs and other public agencies was analyzed and presented in the health accounting format using the NASA standards. The expenditures were grouped according to the functional classifications of the internationally accepted criterion. Similarly the classification for Sources, Agents of funds and Providers of Health Care were arranged in the format of System HIV/AIDS Accounting. As far as the household survey was concerned, the data was collected from different patients. Using the average household expenditure on HIV/AIDS the overall average household expenditure (which was in fact per patient expenditure) was calculated for the total surveyed households. Detailed Estimation has been discussed in the Chapter III.

In the following diagram, the overall financing mechanism of HIV/AIDS is presented which acts as the basis for the exercise of developing HIV/AIDS Account

Chart 1.5


FUND FLOW MECHANISM FOR HIV/AIDS IN DHARWAD
Source of HIV/AIDS Funds
HOUSEHOLDS
Central Government
External Donors/ Other External Funds
NACO
Karnataka State AIDS Prevention Society
State Governement
Karnataka Health Promotion Trust
District AIDS Society
Local NGOs
ART & VCTCs
Public Providers
NGO Providers
Private Providers
HIV/AIDS Related Functions
BENEFICIARIES/TARGET GROUPS

1.12: Limitation of the Study

1. The present study has used data for the period of one year only i.e. the financial Year of 2008-09
2. The Study has considered only expenditure incurred on Preventive and Curative health care functions (Non health expenditures not considered).
3. The present study focused only on fund flow of Sources, Agents, Providers, Production Factors, Functions, and Beneficiaries.
4. The Study has ignored Biological and Sociological aspects of the epidemic.

1.13: Outline of the Study

The thesis has been presented in Ten Chapters which are as follows

1. Chapter I: Introduction
2. Chapter II: Review of Literature
3. Chapter III: Methodology of the Study
4. Chapter IV: Health Status and Health Care Facilities in Karnataka State
5. Chapter V: Health Care Financing in Karnataka State
6. Chapter VI: Scenario of HIV/AIDS in Karnataka State
7. Chapter VII: HIV/AIDS Accounts: A Sub- regional Analysis
8. Chapter VIII: Estimating the Out of Pocket Spending (OOPS) to HIV/AIDS
9. Chapter IX: Concluding Observations for further research

In the next chapter an attempt is made to present the literature review relating to National AIDS Spending Assessment (NASA) and financing of HIC/AIDS in different countries

Appendix

The Disease of HIV/AIDS:

A 1: The history of AIDS:

The history of AIDS is a short one. As recently as the 1970s, no one was aware of this deadly illness. Since then the global AIDS epidemic has become one of the greatest threats to human health and development. The origin of AIDS and HIV has puzzled scientists ever since the illness first came to light in the early 1980s. The first recognized cases of AIDS occurred in the USA in the early 1980s.

The presence of HIV infection was first detected in India among sex workers in Chennai in 1986. The first case of AIDS was detected in Mumbai in 1986. Since then, HIV infection has been reported from different parts of the country. India has the second highest number of HIV – infected persons (5.21 million), after South Africa (5.5 million). But India's prevalence is still considered "low" (i.e. less than 1 per cent) because India's population is 1.1 billion, as compared to South Africa's 44 million (Stanecki, 2006; NACO, 2006). The overall estimated prevalence in previous years was 0.93 per cent (2003) and 0.92 per cent (2004), which is comparable to 0.91 per cent in 2005 (NACO, 2006). Considering India's large population, a mere 0.1 per cent rise in prevalence would increase the number of people living with the virus by over half a million (Fredriksson-Bass & Kanabus, 2006).

The first person with AIDS in Karnataka was identified in 1988. Since then, there is evidence that the HIV epidemic has reached a substantial portion of the population. Based on an estimated prevalence of 1.5% in the general population (reflecting the prevalence among antenatal women) there are more than 500,000 persons already living with HIV in the state. In this context we also need to quantify the resource flows to HIV/AIDS control and management. In the present day context such an exercise seems to be non-

existent in the Indian union and the proposed study would make a modest attempt initially at the district level.

Several theories have been propounded regarding the origin of HIV. The first theory is that HIV has been around among mankind for a very long period and has recently become more virulent. One possibility is that the virus comes from a small and isolated ethnic group, which had acquired immunity to it, so that it had rarely caused death. When it spreads outside this group and reaches people who had no such immunity, it becomes a killer disease. The second theory is that HIV originated among monkeys and was transmitted to humans. The third theory is that of a man made virus, from a germ warfare laboratory. The discovery of the putative virus fitted into theories about the transmission of the disease that saw it originating in Africa, from where it was said to have spread, perhaps via Haiti to the United States and the rest of the world.

Many researchers argue that AIDS originated somewhere in Central Africa from a retrovirus (generic name for a group of viruses) infecting the African Green Monkey. Scientists speculate that the ancestors of AIDS virus have been living in the Green Monkey, a native of Africa – for a long time that could stretch to as long as 50,000 years. It has been postulated that some African Green Monkey, sometime, somewhere, must have bitten or scratched some African in the forest infecting the human being with retroviruses that cause AIDS. Some others believe that the virus manifested itself in some tribe that eats monkey's meat and later spread to other people due to the migration of the tribe. Hence, it is argued that certain organisms which have been living in some animal without causing any trouble for its host, suddenly jumps the species and enters Man, causing mild or serious illness. Some researchers also argue that the AIDS virus existed in Africa but was associated with mild symptoms. It was only after the AIDS virus manifested itself in the United States that the scientists tested the frozen samples of blood drawn from the Ugandans in 1972 and found a large percentage of them to be HIV as a deadly Virus. It was only after its diagnosis in the USA that researchers started

working on its clinical aspects. It has been conjectured that the HIV spread from Africa to Haiti and from there to the USA, where it was first identified as a clinical category.

In February 1999 it was announced that a group of researchers from the University of Alabama had studied frozen tissue from a chimpanzee and found that the simian virus it carried (SIV cpz) was almost identical to HIV -1. The chimpanzee came from a sub-group of chimpanzees known as Pan Troglodytes, which were once common in west-central Africa. Postulates put forward till date remain unconfirmed and therefore the origin of HIV remains unknown.

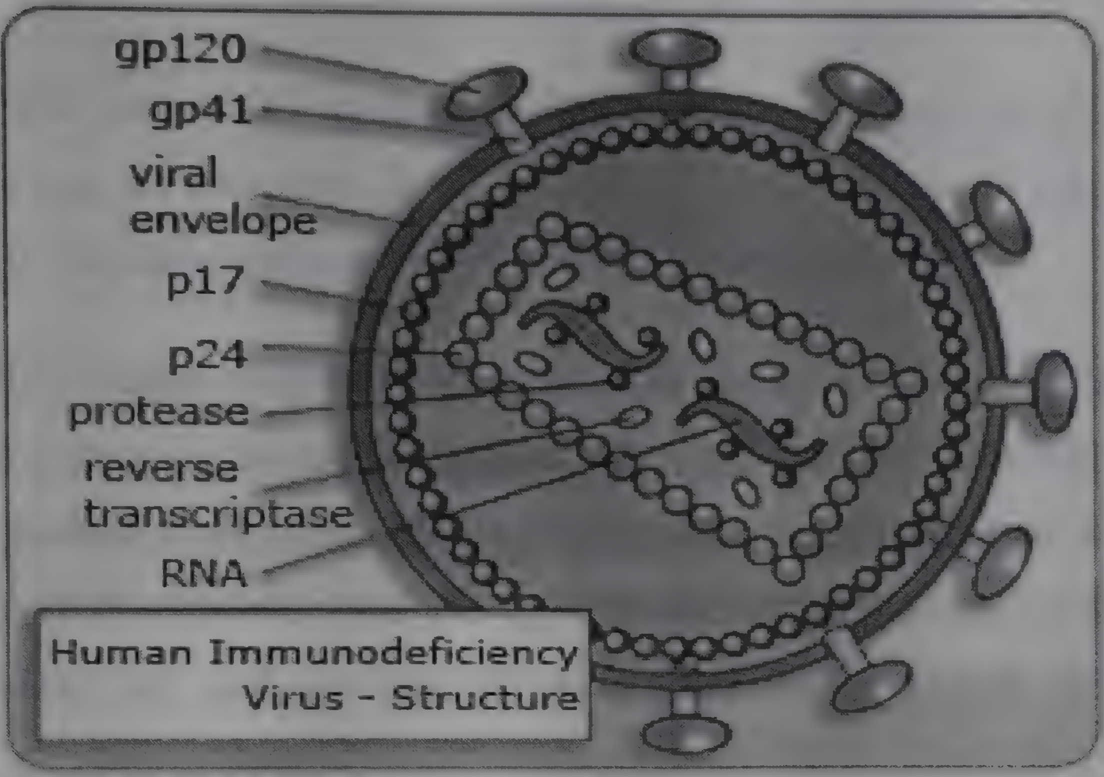
A 2: Biology of the Virus in Brief: HIV (Human Immunodeficiency Virus) is a virus. The Viruses cannot grow or reproduce on their own, they need to infect the cells of a living organism in order to replicate (make new copies of themselves). The human immune system usually finds and kills viruses fairly quickly, but HIV attacks the immune system itself – the very thing that would normally get rid of a virus.

An HIV particle is around 100-150 billionths of a meter in diameter. That's about the same as:

- 0.1 microns
- 4 millionths of an inch
- One twentieth of the length of an E. coli bacterium
- One seventieth of the diameter of a human CD4+ white blood cell.

Unlike most bacteria, HIV particles are much too small to be seen through an ordinary microscope. However they can be seen clearly with an electron microscope.

Picture 1.1: Structure of HIV Virus



Source:http://en.wikipedia.org/wiki/HIV/AIDS

HIV particles surround themselves with a coat of fatty material known as the viral envelope (or membrane). Projecting from this are around 72 little spikes, which are formed from the proteins gp120 and gp41 just below the viral envelope is a layer called the matrix, which is made from the protein p17. The proteins gp120 and gp41 together make up the spikes that project from HIV particles, while p17 forms the matrix and p24 forms the core.

The viral core (or capsid) is usually bullet-shaped and is made from the protein p24. Inside the core are three enzymes required for HIV replication called reverse transcriptase, integrate and protease. Also held within the core is HIV's genetic material, which consists of two identical strands of RNA.

HIV belongs to a special class of viruses called retroviruses. Within this class, HIV is placed in the subgroup of lent viruses. Other lent viruses include SIV, FIV, Visna and CAEV, which cause diseases in monkeys, cats, sheep and goats. Almost all organisms, including most viruses, store their genetic material on long strands of DNA. Retroviruses are the exception because their genes are composed of RNA (Ribonucleic Acid). RNA has a very similar structure to

DNA. However, small differences between the two molecules mean that HIV's replication process is a bit more complicated than that of most other viruses.

With around 2.7 million people becoming infected with HIV in 2008, there are now an estimated 33 million people around the world who are living with HIV, including millions who have developed AIDS.

HIV causes AIDS by damaging the immune system cells until the immune system can no longer fight off other infections that it would usually be able to prevent. It takes around ten years on average for someone with HIV to develop AIDS. However, this average is based on the person with HIV having a reasonable diet, and someone who is malnourished may well progress from HIV to AIDS more rapidly.

A 2.1 How does virus enter into the human body?

HIV is found in the blood and the sexual fluids of an infected person, and in the breast milk of an infected woman. HIV transmission occurs when a sufficient quantity of these fluids get into someone else's bloodstream.

There are various ways a person can become infected with HIV: They are as follows

- **Unprotected sexual intercourse with an infected person:** Sexual intercourse without a condom carries the risk of HIV infection.

- **Contact with an infected person's blood:** If sufficient blood from somebody who has HIV enters someone else's body, then HIV can be passed on in the blood.

- **Use of infected blood products:** Many people in the past have been infected with HIV by the use of blood transfusions and blood products which were contaminated with the virus. In much of the

world this is no longer a significant risk, as blood donations are routinely tested for HIV.

- **Injecting drugs:** HIV can be passed on when injecting equipment that has been used by an infected person is then used by someone else. In many parts of the world, often because it is illegal to possess them, injecting equipment or works are shared.

- **From mother to child**: HIV can be transmitted from an infected woman to her baby during pregnancy, delivery and breastfeeding.

- Certain groups of people, such as injecting drug users, sex workers, prisoners, and men who have sex with men have been particularly affected by HIV. However, HIV can infect anybody, and everyone needs to know how they can and can't become infected with HIV.

A 3: Precautions need to be taken to prevent the epidemic:

- HIV education needs to be culturally appropriate and can take place in various settings, for example lessons at school, media campaigns, or peer education.

- Effective sex education is important for providing young people with the knowledge and skills to protect themselves from sexual transmission of HIV. Comprehensive sex education should develop skills and attitudes that encourage healthy sexual relationships, as well as provide detailed information about how to practice 'safer sex'.
- A person can protect himself or herself against HIV infection by ensuring that HIV infected blood does not enter their body.

- Health care workers can be exposed to HIV infected blood while at work. The most effective way to limit their risk of HIV infection is to use universal precautions with every patient, for example washing hands and wearing protective barriers (gloves, aprons, and goggles). In the event that a healthcare worker is exposed to potentially HIV infected blood at work, PEP (Post exposure prophylaxis) is recommended as an HIV prevention measure.

A 3.1: Effective Prevention of Mother-To-Child Transmission (PMTCT) requires Following Strategy:

A) Preventing HIV infection among prospective parents - making HIV testing and other prevention interventions available in services related to sexual health such as antenatal and postpartum care.

B) Avoiding unwanted pregnancies among HIV positive women - providing appropriate counseling and support to women living with HIV to enable them to make informed decisions about their reproductive lives.

C) Preventing the transmission of HIV from HIV positive mothers to their infants during pregnancy, labour, delivery and breastfeeding.

D) Integration of HIV care, treatment and support for women found to be positive and their families.

Chapter II

Literature Review

Many studies have been conducted to understand the spending sources and pattern on HIV/AIDS. But only few studies have adopted National Health Accounting (NHA) methodology. During the year 2009, UNAIDS developed a special methodology for accounting the AIDS spending, called National Aids Spending Assessment (NASA). In this chapter, the available literature on accounting of HIV/AIDS has been presented in the following sections.

1. Overview of National Health Accounts (NHA)
2. An application of the NHA method to HIV/AIDS
3. National Aids Spending Assessment (NASA)
4. Countries which have adopted NASA Methodology
5. International Experience in Tracking Resource Flows in the HIV/AIDS sector
6. Resource flows to HIV AIDS: A Global View
7. Health Spending in India
8. Household Out-of-Pocket Expenditure on Health
9. Public Financing of Health
10. Health Expenditure by the Central Government
11. Centralization of funds and inadequate capital expenditures
12. CGHS-a mandatory social health insurance scheme for the Central Government Employees
13. Low priority for preventive health care
14. Health expenditure by State Governments

2.1. Overview of National Health Accounts (NHA):

Briefly, the NHA offers a systematic method for recording and analyzing financial flows between different *ultimate* sources of funds, financing agents, and the ultimate providers of health care. Sources of funds typically include the major branches of the government (such as the Ministry of Finance/Treasury), international donor agencies, households, private firms/employers and the like. Financing agents, or intermediaries, refer to entities that directly pay the providers of care and/or users of health funds. Examples include insurance companies, households, and government agencies like the Ministry of Health, the Ministry of Education, local governments, non-governmental organizations, health research institutions and universities. A household that directly pays for the services of a provider would enter in the system both as an ultimate source of funds and as a financial agent. As another example, if care is financed by means of payments by an insurer, the insurer appears as a financial agent in the NHA system, whereas the household appears as the ultimate source of funds, assuming that it paid the premium. Providers include hospitals, clinics, primary health centers, traditional health care institutions, pharmacies and researchers (Berman 1997).

The aim of NHA is to measure the total volume of financial expenditures and present them in such a way that the flows of resources between different units in a health care system are immediately visible to the managers of the health sector.

2.1.1 Studies which have adopted NHA Methodology:

In the early 1990s, two studies sought to estimate expenditures on HIV/AIDS in Asia one in Thailand for 1991-92 (Viravaidya, Obremsky and Myers 1993), and the other in Sri Lanka for 1993 (Bloom *et al.* 1997). The Thailand study highlighted HIV/AIDS expenditures by various *ultimate* sources of funds – the government, donors and the private sector. The results were presented in the aggregate which included expenditures incurred by financial

intermediaries such as non-governmental organizations and ministries other than the Ministry of Finance, and expenditures incurred by selected use categories (e.g., testing of military recruits). Due to the peculiarities of presenting 6 expenditure data in this manner, and the possibility of double counting, the study is not particularly effective in yielding an accurate estimate of expenditures on HIV/AIDS, whether by sources, or by use categories. Therefore, this presents only a partial picture of expenditures of the listed entities, as the authors themselves acknowledge, "…this is clearly only a partial list of expenditures for AIDS prevention…." (Viravaidya, Obremsky and Myers, p.17). The authors also tried to estimate expenditures incurred on treatment, using estimates based on costs for a limited sample of AIDS patients in two provincial and two central hospitals. Many health care providers (e.g., traditional providers) are excluded from their analysis and it is not clear, except by way of guesstimates, what proportion of the estimated expenditures in their study was an out-of pocket payment by households, and what proportion was paid by other agencies. More generally, the analysis does not appear to have captured all the expenditures incurred by the main sources of funding, even excluding households. It failed to include, for example, expenditures linked to management of HIV/AIDS related activities and Research.

The study for Sri Lanka considered expenditures incurred by the government, nongovernmental organizations and international donor agencies. Data for this study were obtained from government records, Sri Lanka's national AIDS control agency, and from international donor groups. The study suffered from many of the coverage inadequacies identified above for the Thailand analysis. For instance, it did not include any estimate of household expenditures on prevention and treatment. The study also failed to distinguish between ultimate sources of funding and financial agents/intermediaries so there was also the possibility of double counting items listed under some of the expenditure categories. Nor did the study provide a breakdown of the HIV/AIDS expenditures by use categories, or providers.

The second study for Thailand (Pothisiri *et al.* 1999) presents data on public expenditures that have directly related to HIV/AIDS. Public expenditures accounted for in the study related to five HIV/AIDS activities: health promotion and medical services, coordination, empowerment of individual and community, social and psychosocial services, research and local intellectual capacity development. While including expenditures of this type across several ministries, the data do not account for HIV/AIDS expenditures potentially arising from any use of public health services by AIDS patients not necessarily identified as HIV-positive. Thus, HIV-positive individuals who report to a hospital for symptomatic illnesses (such as tuberculosis) associated with AIDS could end up using public health services, but the resulting public expenditures excluded from the calculations reported in the study. Nor does the study include out-of-pocket expenditures that may have been incurred by households that have persons living with HIV/AIDS. More generally, like the studies reviewed above, Pothsiri *et al.* fail to distinguish between ultimate sources of HIV/AIDS funds in the public sector, and financing intermediaries, or explicitly identify providers of health care, or users of health care funds. Thus, even for this limited set of data, the study falls short of the standards of a typical NHA-based framework.

The Harvard School of Public Health undertook a study on behalf of UNAIDS to track the level and flow of national and international resources to HIV/AIDS related activities in developing countries during 1996 and 1997 (Ernberg *et al.* 1999). It relied mainly on 7 mailed questionnaires to collect information on HIV/AIDS expenditures from 64 developing countries and transition economies of Eastern Europe, and provided information only on funds provided by government and donor agencies, while data on expenditure by households, employers and NGOs, and the entire private sector, were not captured by the study. Indeed, the study was unable even to capture public sector spending on HIV/AIDS in its entirety, failing to account for overhead spending, and in particular, expenditures on HIV/AIDS patients who may have received treatment at public facilities for symptomatic illness and the like. Overall, the

authors suggest that they underestimate national and international HIV/AIDS spending by nearly one-third.

The study did meet some of the standards of an NHA approach, however. For instance, while not explicitly using the term financing intermediaries to describe entities that directly pay for health care provisions and/or users of health care funds, this study did, at least with regard to HIV/AIDS related funds provided by Official Development Agencies (ODA), trace the flow of funds in a way that agencies serving as financing intermediaries could be identified. However, the study failed to identify providers of health care services and/or uses of health care funds in any explicit fashion.

In contrast to the above, the next three sets of studies have discussed much closer in spirit to an NHA approach. Shepard and others undertook a five-country study of the sources and uses of health expenditures linked to AIDS – in Brazil, Cote d'Ivoire, Mexico, Tanzania and Thailand, respectively (Shepard *et al.* 1998; Kone *et al.* 1998; Izazola *et al.* 1998; Iunes *et al.* 1998; Tibendebage *et al.* 1998; Kongsin *et al.* 1998). These studies used a variety of sources (e.g., official documents, expert assessments, household health surveys) to bring together estimates on sources of funds by public, private and international sources, and uses – by prevention and treatment. For example, expert assessments were used to estimate the health care utilization patterns of AIDS patients and per-case costs of treatment of AIDS, which were then multiplied by the estimated number of AIDS cases to obtain total treatment costs. When available, information about social insurance schemes was used to estimate the distribution of treatment costs between insurers, the public sector, employers, and out-of-pocket payments by households. The level of detail provided for each country depended on the data available, with information about Brazil being the most detailed. The estimates of HIV/AIDS expenditures typically did not include expenditures on "mitigation" – for example, caring for HIV/AIDS orphans, empowerment and human rights issues linked to HIV/AIDS and the like. More generally, these studies typically

did not distinguish between ultimate sources of funds and financing intermediaries, thereby leaving open the possibility of double counting some of the expenditure numbers.

SIDALAC (Regional AIDS Initiative for Latin America and the Caribbean) has served as a supporting body for a number of HIV/AIDS expenditure studies based on the NHA framework (Izazola 2000; SIDALAC 1999). Studies for Brazil, Guatemala, Mexico and Uruguay have been completed as part of this work thus far (Izazola 2000, p.1). The methodology adopted by these studies essentially revolves around defining a set of activities to be included in the HIV/AIDS calculus and describing financial flows related to these activities in the form of three main types of matrices – ultimate financial sources and financial agents, financial agents and the providers of care, and financial agents and 8 the main expenditure categories (prevention, treatment and the like). Izazola *et al.* (2000) illustrate this method using Guatemalan data.

There are eight main sets of studies that have previously been undertaken to estimate the amount spent on HIV/AIDS-related activities according to NHA methodology. Some focused only on expenditures, incurred by the public sector, whereas others provided more information on sources and uses of funds for HIV/AIDS, although falling short of applying the full-fledged NHA method.

2.2. An application of the NHA method to HIV/AIDS:

A standard NHA approach towards health-related financial flows would require the construction of three related sets of matrices – a description of the flow of funds between financial agents and sources of funds, financial agents and uses of funds (institutional classification), and financial agents and activities (preventive care, management and treatment). In addition, these analyses are accompanied by a summary NHA that describes the sources and uses of health care funds by broad categories. Therefore, Barnett *et al.* (2001) tried to apply NHA method to HIV/AIDS.

Barnett *et al.* (2001) used a methodology similar to the one for Latin America and adapted it to the case of Rwanda to construct HIV/AIDS accounts based on the NHA approach. This study identified three HIV/AIDS-related activities, namely those relating to *prevention and promotion*, such as raising awareness, effecting behavior change and promoting safe sex campaigns; *management*, such as palliative care, surveillance, blood screening and family support; and *treatment,* including hospital and clinic expenditures, counseling and alternative/traditional therapies. As in the case of the studies supported by SIDALAC, the analysis for Rwanda explicitly distinguished ultimate sources of funds from financing intermediaries, and these, in turn, from providers of services/uses of funds. It estimated three major matrices describing flow of funds between sources and Financing intermediaries, financing agents and uses, and uses/providers of services, types of activities and providers of services. The present study will adapt the Rwandan study to suit the Nigerian situation.

Here, an attempt is made to develop disease specific sub accounts within the framework of Health Accounts. The usefulness of such an exercise for the policy making would be tremendous and the data base created out of such attempt would help in correcting the bottlenecks in the delivery of HIV / AIDS related services.

2.3. National Aids Spending Assessment (NASA):

Very recently UNAIDS (2009) has pushed into the arena the NASA framework for developing HIV/AIDS accounts which aims at developing a common comparable package to track and quantify the resource flows for preventing and managing the deadly disease. In the following discussion an attempt is made to present the overview of NASA which is used as the basis for the district level investigation.

The study followed the global National AIDS Spending Assessment (NASA) methodology and guidelines, and made use of standard NASA tools. It considered all the broad-based classifications for HIV and AIDS expenditure across three dimensions (Source, Financing, and Use), which incorporate six vectors (Sources, Agents, Providers, Production Factors, Functions, and Beneficiaries). The study prepared with an end in view of conducting a complete accounting of actual HIV and AIDS expenditures.

Detailed approach was instituted to collect the data, analyze, and report the flow of funds to HIV/ AIDS expenditure. This spending assessment is, therefore, a reflection of district HIV/AIDS spending categorized by function and beneficiary population.

Every disease has its own type of health care functions. Therefore, UNAIDS has developed the NASA framework to get clear picture about track and quantify the resource flows for preventing and managing the deadly disease.

Broad activities which are covered under the NASA, the components (Objects) of expenditure and Boundaries and functions (health/non-health) etc. have been discussed in the third Chapter

2.4 Countries which have adopted NASA Methodology:

In Indonesia, Using NASA category, the HIV program responses are divided into 8 major categories with 80 sub categories. Of total expenditures, prevention program consumed the highest proportion of fund (41.76%0.), followed by care and treatment and program management (34.59% and 15, 8.9% respectively). It was found that about USD 370 thousand spent for Research on HIV (primarily funded by World Bank). Orphan and vulnerable children program used the smallest proportion of the fund.

Both Public and International sources had different focus activities in combating the HIV and AIDS in Indonesia. The result shows that the government of Indonesia was focusing on program management, assigning the HIV budget for 38.96% of total HIV expenditure in 2007. On the other hand, International partners was consistent allocating their support to promote country's prevention program (87.93%) and still more spending on care and treatment as compared to public source. However, again, donor contribution for management / overhead was not included in the analysis, so in reality the proportion might be different.

Botswana National AIDS Coordinating Agency (NACA) Joint United Nations Program on AIDS (UNAIDS) has assessed total expenditure on HIV/AIDS and Sources of Funding in Botswana The total expenditure on HIV/AIDS (public and external, excluding private) in Botswana has steadily increased over the three year period of assessment, to Pula 1,138 million in 2005/06. The large proportion that public sources contribute to the total funds spent; 89%, 80% and 79% in 2003, 2004 and 2005 respectively. The share contributed by external sources has gradually increased over the period; 10%, 19% and 20%.

The Institute of Statistical, Social and Economic Research (ISSER), University of Ghana for the Ghana AIDS Commission (GAC) and the Joint United Nations Programme on HIV and AIDS (UNAIDS) Estimated Expenditure on HIV and AIDS and Sources of Funding in Ghana Funds from international organizations formed 78.3 percent of total spending on HIV and AIDS; public funds formed 21.4 percent of the total expenditure whilst private sources of funding constituted 0.3 percent. The study did not collect all private (businesses and household or individual out-of-pocket) spending on HIV and AIDS related activities, hence this total from the private sector does not represent their contribution to the total spending on HIV and AIDS in 2007. A key finding was that out of the total funding by international organisations only 23 percent was

sent to the pooled or earmarked fund overseen by the GAC. The majority, 77 percent was sent directly to implementing agencies which defeats one of the aims of the Paris Declaration of pooling funds to avoid duplication of efforts and a more effective response to the epidemic. Most of the funds were spent on Treatment and Care (40 percent); Programme Management and Administrative Strengthening (35 percent) and Prevention Programmes (12 percent). The remaining 13 percent of the total funds was shared amongst the remaining 5 priority areas.

In Lesotho, the largest portion of the expenditure under treatment and care in the financial year 2005-06 was on ART. In this assessment it shows the expenditure on ARVs (56%) by the GoL and other donors. The next highest reported spending is on OI treatment (21%). This primarily consists of the expenditure on drugs and inpatient care provided to HIV +ve patients. Nutritional support (11%) has been provided largely by the WFP and in some small measure for pediatrics by UNICEF. WFP provides the family rations to food insecure HIV +ve patient's households that access the ART clinics. The expenditure captured for provider initiated testing (2%), HIV-related laboratory monitoring (3%), HBC (6%) and OI prophylaxis (1%) is from the inputs procured. These would include test kits, drugs and HBC kits, but not human resources or capital expenditure.

It is found that the expenditure on HIVAIDS through treatment and care is one of the most under-reported. The under-reporting is both on part of the international NGOs that work in the country and the MoHSW. A number of international NGOs that work in the country do not have good in-country support systems. Given the nature of the NASA, it is not possible to record a lump sum amount spent on treatment and care.

The Mozambique Government committed itself to undertake a comprehensive National AIDS Spending Assessment of public, international and

private HIV and AIDS expenditure in Mozambique External financing sources accounts for 82% of the national HIV and AIDS expenditure during 2004-2006. Public funds constituted 16% of the total HIV and AIDS expenditure, while private sources of funding accounted for only 2%. It is important to note that the assessment only captures private household out of pocket HIV and AIDS expenditure on condoms in 2006. Public spending constituted 16% of total HIV and AIDS expenditure between 2004 and 2006 the total share of Private expenditure on HIV and AIDS over the three years is 2%. Since the assessment did not collect household out-of-pocket payment on HIV and AIDS, this percentage does not represent the total contribution of private expenditure on HIV and AIDS. As can be discerned from the table 16 below, the private HIV and AIDS expenditure has decreased from 55% in 2004 to 27% in 2006.

The total spending by year by the eight NASA AIDS Spending Categories (ASC). The key spending priorities for 2004-2006 have been on prevention (40%), treatment (29%) and programme management and Administrative strengthening (15%). Although in absolute terms there was an increase in all spending categories, but total expenditure on prevention programmes that is, ASC 8 declined from 48% of total funding in 2004 to 34% in 2006; while expenditure on treatment and care increased from 21% of total spending in 2004 to 37% in 2006. Another important key intervention area where spending has being decreasing over the years is human resources recruitment and retention incentives. Spending fell from 9% of total spending in 2004 to a low 5% in 2006. Total spending on an enabling environment and community development increased during the reporting period from 0.4% in 2004 to around 1% in 2006. Total spending on programme management and administrative strengthening has remained stable from 2004 to 2006. Total spending on Orphans and Vulnerable Children (OVC) and HIV and AIDS related research remains low at 7% and 8% of total spending respectively between 2004 and 2006.

In Nepal, of the total spending, 67% was financed by bilateral donors, followed by multilateral sources including the Global Fund (24%). Government financing for the programme was a mere 3%. International not-for-profit sources, mainly international non-government organizations, used up about 6% of total spending

There are eight major spending areas or HIV/AIDS spending categories (ASC) as classified by the NASA methodology. In Nepal, except for one spending catagory (ASC 05: Incentive for recruitment and retention of human resources), all seven categories have recorded expenditure in 2007. Of total expenditure, nearly half (46% or US$8,187,202) was spent on prevention and 16% on treatment and care. Orphans and vulnerable children and social protection registered the lowest expenditure. Almost a quarter of the fund (24%) was spent on programme management and administration, comprising expenditures on monitoring and evaluation, operational research, drug supply system, upgrading infrastructure, and others . Of total spending on HIV/AIDS, almost half 46% went to prevention-related activities. The top 10 interventions (out of 31 sub-categories) consuming almost 80% of prevention resources.

In the Philippines, resources were poured mostly on prevention activities (77.7 percent in 2000, 65 percent in 2002 and 62.3 percent in 2004). With the low prevalence in the country, efforts were concentrated on keeping the prevalence low and keeping the rate of transmission slow. Prevention programs in the country include- IEC, condom social marketing, counseling and testing, STD management, among others.

Resources were also spent on program costs, which include advocacy activities, capability building, monitoring and surveillance, laboratory infrastructure, research and management costs. Notably, a lot of resources were

poured on AIDS program cost in 2001 (61 percent) largely by donor agencies (USAID and JICA activities).

In Russia, data by the NASA AIDS Spending Categories show that the key spending priorities have been on prevention (49%); programme management and administrative strengthening (23%); and social protection services and social services (19%). Overall spending on HIV and AIDS was $ 7,6 million in 2006. Figure 20 presents spending by programmatic areas and their components in 2006. The analysis shows that the major spending category was prevention ($ 3,7 million), capturing almost the half of the period expenditure.

The overall spending on HIV and AIDS from public sources substantially increased over the period 2006 to 2007 particularly due to international sources which provided 98% of the overall HIV spending in Sierra Leone. Even though spending of The Global Fund decreased in absolute figures and as a share (over $3.1 million or 41% of total in-country spending in 2006 compared to $2.6 million or 25% in 2007) it remains the largest financing source of the HIV response in Sierra Leone. The overall increase of the international spending was mainly due to bilateral donors whose contribution has changed from $378,079 or 5% of total spending in 2006 to $1,379,562 or 15% in 2007. World Bank became the second largest funding source in Sierra Leone only in 2007 (over $2 million or 22% of total HIV spending) due to improved resources utilization and overall project implementation. In 2006 WB financed only 6% of the HIV response in SL – nearly $0.5 million.

NASA Thailand reveals that the spending on HIV/AIDS has almost doubled in the last 5 years, from 65.4 million USD in 2000 to 122.90 million USD in 2004. As a result expenditure on HIV/AIDS spending per capita increased from 1.05 USD in 2000 to 1.91 USD in 2004 while expenditure per capita PLWA increased dramatically from 94.19 USD in 2000 to 214.68 USD in

2004 (128% increase). Share of HIV/AIDS expenditure to total health expenditure (THE) increased from 1.57% in 2000 to 2.64% in 2004. Meanwhile, Thailand spending on HIV/AIDS as a percentage of GDP increased from 0.05% in 2000 to 0.08 % in 2004. HIV/AIDS spending during 2000-2004 including selected indicators derived from such amount of spending.

Undoubtedly in Thailand, public sector was major financing sources for HIV/AIDS program. However it had been declining every year from 94.8 % in 2000 to 75.5 % in 2004 and there was remarkable increase in the share of external sources, especially from the Global Fund; in 2003 external sources contributed to 18 % and increased to 24.5 % in 2004. While new resource from external source coupled with reduction in ART price widened opportunity for Thailand to enhance HIV/AIDS program especially for ART treatment. Uncertainties arise from increase in cost of ART—either by change in ART price or shifting treatment regimen—and, potential withdrawal of external support could jeopardize program sustainability as well as efficacy of the program.

Trinidad and Tobago National AIDS Coordinating Committee Assess the HIV and AIDS Financing Flows and Expenditure 2002 - 2006. The vast majority of the expenditure has been to the benefit of the target population of people living with HIV and AIDS demonstrating that to date the response has been centred on treatment. Ideally, the data would be able to capture expenditure made towards sub-population, for example, children, or adult females; however these data have only been collected sporadically. With the Most at Risk Populations, although in terms of percentages this group appears to have come off poorly in terms of the targeting of resources the actual expenditures have exceeded the NSP Targets by a substantial level. The NSP calls for specific targeting of resources towards these groups in terms of information materials and behaviour change interventions and indicates the following budgeted figure MSM TT$0.82 (US$0.08m); CSW TT$1.45 (US$0.23m), prisoners and drug

impact programmes TT$0.32 (US$0.05m each) totalling TT$2.58m (US$0.41m). Total actual expenditure for the period, directed towards key populations has exceeded the NSP target by TT$3.32m, totaling TT$5.9m. However, when consideration is given to the actual expenditure classified by vulnerable group, some groups have not received the benefits of targeted interventions. There has been little in this way of targeted interventions directed at sex workers and prisoners.There has been significant targeting of resources to the General Population over the period averaging at around 41% of total resources. However, when we consider sub-populations within the general population, for example young women in the age group- 15-29 targeting has reduced from a high of 6.36% in 2003 to 0.08% in 2006. This reduction in targeting is a concern especially when consideration is given to the sharp increase in new infection rates in females between the age group 15 – 34, Infections 2003-2007 Female).

These above findings of Countries which have adopted NASA Methodology are useful to know who finance what priority activities in the country, and whether the country could ensure the sustainability of the resources in the future by looking at the trends. It would expect that the government would provide increased funds year by year. The information could also be used to overview the transparency of the donor funds, how the fund has been used.

2.5. International Experience in Tracking Resource Flows in the HIV/AIDS sector:

The magnitude and pattern of spending on HIV/AIDS varies from country to country. The funding pattern could thus depend upon the magnitude of the problem in the country, priorities of domestic governments, donor agencies – both bilateral and multilateral, private players and consequently on households and non-governmental organizations. Country level and regional level initiatives are taking place to monitor and track financial flows into this sector. Two of the pioneering studies dating back to the early 1990s relate to Asia, one for Thailand

in 1991-92 (Viravaidya, Obremsky andMyers 1993) and the other pertaining to Sri Lanka in 1993 (Bloom, Mahal andChristiansen, et al 1997). Later, a comprehensive study involving five countries (Brazil,Cote D Ivoire, Mexico, Tanzania and Thailand) was initiated to understand spending levels and patterns of different players in the area of HIV/AIDS (Ainsworth, Fransen and Over 1998). Major recent regional efforts called SIDALAC – Regional AIDS Initiative for Latin America and the Caribbean has helped assess spending levels and pattern on HIV/AIDS for 26 countries. The SIDALAC essentially uses National AIDS Account (NAA) approach while few others have analysed disease-specific health spending in countries using the National Health Accounts framework. The framework of National Health Accounts (NHA) has attracted much attention in the work for Rwanda (Barnett, Bhawalkar, Nandakumar, Schneider 2001) and Nigeria (Canning, Mahal, et. al 2006) in recent years.According to UNAIDS projections, the estimated funds available for HIV/AIDS sector in low and middle-income countries is around US $ 8.9 billion as against the required amount of US $ 14.9 billion8. The projections further indicate that funding from domestic sources is likely to be in the range of US $ 2.8 billion, which works out to roughly 31 percent of the total funding. It is interesting to observe that on an average, households out-of-pocket spending is approximately one-fourth of all HIV spending in low and middle-income economies (particularly in Latin American countries). But for other low and lower-income group countries, households OOP expenditure is likely to be much higher. The burden on households appears to be significantly less in upper and middle-income countries, where governments cover 80 to 95 per cent of the HIV-related costs. In sub-Saharan Africa, studies observe a higher OOP spending in Kenya accounting for 45 per cent, 30 per cent in the Republic of Zambia in 2002 and 14 per cent in Burkina Faso in 2003 (Kates, 2005). Since public health system is poorly developed in many of these low income countries, the share of OOP spending is high. It is shocking to observe that Burkina Faso's HIV spending is almost entirely donor-driven, accounting for 78 percent of all HIV spending in that country.

Table 2.1: Expenditure in Functions by Source in 13 Latin American Countries

(% of the Total Expenditure)

Source	Health Care Functions					Total
	Care	Prevention	Administration	Investment	Non-Health	
Public	70.3	8	4.5	0.1	0.7	83.6
Private	4.6	9.7	0.1	0.1	0.3	14.8
International	0.3	0.5	0	0	0.8	1.6
Total	75.2	18.2	4.6	0.2	1.8	100

Source: SIDALAC (2004), Satellite Meeting Resource Tracking and Priority Setting, XV International AIDS Conference, Bangkok, 11July, 2004.

The above table demonstrates quite revealingly the predominant role of governments in the Latin American countries, which singularly accounted for roughly 84 per cent of all HIV/AIDS related expenditure. Also, treatment care alone accounted for around three-fourths of total HIV spending, of which the government contributed the major share, of 70 per cent of the entire HIV/AIDS related expenditure. The table further shows that the share of donor agencies is less than two percent while private spending which is also composed of OOP payments, is less than 15 per cent. Based on preliminary findings shared in a regional workshop on NHA9, it emerges that Thailand's expenditure pattern shows that the bulk of the expenditure is on ART and treatment of opportunistic infections- i.e. services of curative care, constituting over 80% of all expenditure on HIV/AIDS and prevention accounts for only 10%. Also, the total share of expenditure on HIV/AIDS in Thailand has also increased from about 1.5% of all health expenditure in 2000 to about 2.6% in 2004. A high curative care expenditure on HIV/AIDS could be crowding out preventive expenditure, and also raising the total share of HIV/AIDS, thus impacting total resources available in the health sector. Resource tracking allows us to identify gaps and bottlenecks

in the utilization of funds. If the absorptive capacity of the health system of a country is weak, substantial flow and rise in funds will be of limited use. The commitment and pledges of donor agencies as against the actual disbursement of funds is an issue that comes out of resource tracking. It often happens that donor agencies typically announce substantial commitments and pledges of funds during initial stage of a programme but back out gradually in actually releasing the funds. Given the multilevel intermediaries involved in fund flows from original source of funds to the ultimate beneficiaries, several hurdles and regulations restrict the free flow of resources. A scientifically-based national health accounts study could help us in resolving these issues in right earnest.

Low and lower-income group countries, households OOP expenditure is likely to be much higher. It may be because of insufficient prepayment mechanisms like insurance. The burden on households appears to be significantly less in upper and middle-income countries, where governments cover 80 to 95 percent of the HIV-related costs.

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2.6 Resource flows to HIV AIDS: A Global View:

Resource flows to HIV AIDS from the international community for low- and middle-income countries usually reach via one (or more) of three main funding streams: 1)Donation from National Governments 2) Multilateral Funding Organizations 3)Private Funding: Private funding incorporates a wide range of donor types from large corporate donors and foundations to small non-governmental organizations (NGOs).

1) Donation from National Governments: According to UNAIDS (2011) study, the majority of the Global Funding Disbursed for the HIV and AIDS epidemic was provided by donor governments. Within those donor governments, a few account for the bulk of the funding: the United States (U.S.) was the largest

donor in the world, accounting for more than half (54.2%) of disbursements by governments in 2010. The U.K. accounted for the second largest share of disbursements in 2010 (13.0%), followed by France (5.8%), the Netherlands (5.1%), Germany (4.5%), and Denmark (2.5%).

The American government donates a substantial amount of money for the HIV and AIDS epidemic. In his State of the Union address in January 2003, the then President Bush announced the creation of PEPFAR, the President's Emergency Plan for AIDS Relief, a commitment to significantly increase US spending on HIV and AIDS initiatives around the world.6 Planned to run for five years, PEPFAR intended to direct US$15 billion to places where it is most needed. PEPFAR was renewed in July 2008 with the intention of spending US$48 billion from 2009 to 2013 on programmes to tackle HIV and AIDS as well as tuberculosis and malaria.

PEPFAR is an umbrella for all the existing HIV and AIDS related funding being provided by the American government, including the HIV-related funding that was previously distributed through the US Agency for International Development (USAID). As bilateral donors are able to decide where their donated money should be spent, PEPFAR funding is disbursed in accordance with the political views of the United States government.

The Department for International Development (DFID) is the UK government's department for managing Britain's distribution of foreign aid. Though it provides funding for a large range of projects, addressing the global AIDS epidemic is among its principle goals. A new plan for HIV and AIDS support was announced in 2008 with the emphasis on health systems strengthening rather than on HIV and AIDS specifically.7 DFID is the world's second biggest bilateral donor for HIV and AIDS, and is also a major donor to

the Global Fund, committing up to £1 billion of funds for the years leading up to 2015.8

2) Multilateral Funding Organisations: UNAIDS (2009) report revealed that, Funding for HIV and AIDS spending in low- and middle-income countries is distributed by multilateral organisations, which obtain their funding from a number of national governments. The largest such body is the Global Fund to fight AIDS, TB and Malaria, which had distributed about US$6.94 billion on HIV and AIDS by November 2011. Around 61 percent of Global Fund funding is spent on HIV and AIDS.

According to The World Bank (2008) Data,The World Bank is the second largest multilateral donor to the HIV and AIDS response in developing countries and is one of eight co-sponsors of UNAIDS. By the end of 2006, it had disbursed US$879.22 million to 75 projects to prevent, treat and reduce the impact of HIV and AIDS. The World Bank tends to look at the economic aspects of the epidemic - especially the negative effects that HIV and AIDS can have on a country's economy. And the data (World Bank 2008) revealed that, "HIV/AIDS can have a devastating economic impact on countries with severe infection rates. Estimates suggest when the prevalence of HIV/AIDS reaches 8 percent - about where it is today for 13 African countries - the cost in terms of economic growth is estimated at about 1 percent a year"

These large multilateral organizations such as the World Bank, are able to make their decisions fairly independently of the countries that provide their funds. This means they can allocate money to countries and projects that - due to political reasons or prejudice - might have otherwise been ignored by other funding organizations.

2.7 Health Spending in India:

Health spending in India is estimated to be in the range of 4.5%-6%. These estimates are based on a weak methodological background. Therefore, an exercise was undertaken to construct estimates of health spending based on a National Health Account (NHA) framework. Such an approach enables a better and more reliable understanding of the size and structure of health financing in India. Results from the NHA show that the estimated health expenditure in India for the year 2001-02 was approximately Rs 108,732 crore, accounting for 4.8% of the GDP at current market price. While health expenditure as a percent-age of the GDP measured at factor cost works out to 5.2%. Out of this, Central, State and local Governments together spend one-fourth of the total health expenditure. The share of other central ministries, which include railways, defense, posts and telegraphs, other civil ministries, etc., is estimated to be about 2.42% of total health spending in the country. The estimate is based on direct spending by the ministries as well as reimbursements provided to its employees. Local governments' resources for health are through transfers from State Governments and their own resources. An estimated 2.2 % of total health spending comes from the local government. The estimate involves only spending by municipalities and not Panchayati Raj institutions. It is to be noted that municipalities (in metros and particularly Mumbai Municipal Corporation) are major contributors among local governments while the share of Panchayati Raj institutions are a miniscule part of the health budget, since a substantial part of the panchayat's are mostly composed of either Central or State transfers.

Regarding private spending on health, the NHA matrix reveals that 71% of the health budget is contributed by private sector, of which households alone spend 69%. As a percentage of the GDP at current market prices, households spend an esti-mated 3.3%. Spending by private firms is in various ways: either through their own health facilities, or by providing a lump sum amount to the employee for health, or reimbursing a part of the health expenditure incurred or

by contributions to insurance schemes such as ESIS or voluntary private insurance schemes. External aid to the health sector, either to the Government or NGOs, taken together forms 2% of the total health budget. Although the emergence and growth of NGOs have received much attention in India in recent years, their contribution to the health sector is a negligible only 0.3% of the total health expenditure. As financial intermediaries, social insurance accounts for around 2.36% of the entire health budget in the country, with a significant contribution by the ESIS. While community insurance is a non-starter in the country, the share of private vol-untary insurance schemes has a share of less than 1% of the total health budget. The following table gives an overview of the allocations for HIV/AIDS in India and compares the same for Karnataka state as well as an illustration.

Table No: 2.2 Allocations of Funds under National AIDS Control Programme in India and Karnataka

Year	Allocation of Funds (Rs. in Lakh)	
	Karnataka	India
2005-06	1930.12	39222.61
2006-07	3414.45	49691.73
2007-08	4276.87	67941.9
Till Nov., 2008	1129.67	24970.73
Total	10751.11	181826.97

Source : Rajya Sabha Unstarred Question No. 2093, dated 19.12.2008.

2.8 Household Out-of-Pocket Expenditure on Health:

The dominant role of the private sector in Indian health care system is well known, both in health provision and financing. India is one among the developing countries where house-holds spend a disproportionate share of their

consumption expenditure on health care, with the Government's contribution being minimal. Household consumer expenditure data of various rounds of the National Sample Survey Organization (NSSO) suggest that households spend about 5%-6% of their total consumption expenditure on health and nearly 11% of all non-food consumption expenditure.

The analysis here shows the estimate of household expenditure on health for the year 2001-02, using the NHA frame-work. The estimate is based on the utilization pattern of health facilities and the expenditure involved by different sources of care and services provided. However, the mean expenditure and utilization pattern of morbidity for the year 1995-96 has been extrapolated (assuming a similar pattern of expenditure by different providers) and anchored to the 2001 Population Census and applying current growth rates worked out from the 50th and 55th rounds of Consumer Expenditure Surveys (CES) by both rural-urban and inpatient-outpatient populations. This growth rate takes into account both the price factor and growth of services during the period under consideration. Results from the survey suggests that for the year 2001-02, households' out-of-pocket health expenditure is estimated to be Rs 72,759 crore which accounts for 3.2% of the GDP at current market price.

Since 1995-96, household expenditure on health has been growing at the current rate of approximately 14% overall. In 1995-96, households in India spent an estimated Rs 33,253 crore at nominal prices which is then estimated to have increased to Rs 72,759 crore in 2001-02. With an overall growth rate of 14%, household spending is likely to be close to Rs 100,000 crore in nominal terms during 2003-04. Except the category of childbirth/delivery, all other categories registered a current growth rate in double digits. The growth in inpatient expenditure has been the highest, in the range of 16%-18% during 1995-96 to 2003-04. In per capita terms, household expenditure measured in nominal prices has almost tripled from Rs 364 in 1995-96 to Rs 905 in 2003-04, while real per

capita household expenditure is expected to only marginally increase from Rs 265 to Rs 347, respectively.

State-wise analysis (of only major 15 States in India) reveals that Kerala, which is a leading State in terms of health indicators, also accounts for the highest household spending in India, with a little over Rs 1700 per annum. This is followed by Haryana and the Punjab whose households spend estimated Rs 1000 annually. It is interesting to note that these States comparatively have higher levels of public spending on health. Although Tamil Nadu's public expenditure on health is high, household spending is among the lowest. In States such as UP, MP and Orissa, both public expenditure and household expenditures are relatively low.

It is disquieting to note that nearly 70% of the total health expenditure in India comes from households, while around 25% is financed by the Central, State and local Governments. If we consider only out-of-pocket and State and Central Government spending, then households in Bihar and UP met almost 90% of their health care needs by out of pocket means. In other States, which have strong public health systems such as Tamil Nadu, Delhi and Karnataka, households' spending is relatively lower than the public expenditure, accounting for about two-thirds of the total health expenditure in these States.

2.9 Public Financing of Health:

Even though public sector spending accounts for less than a quarter of the total health spending in India, it has a major role in terms of planning, regulating and shaping the delivery of health services. Such public provisioning is considered essential to achieve equity and to address the large positive externalities associated with health. As a result, a vast and widespread public health system grew over time across the country; there were 137,311 sub centers,

22,842 PHCs, 3043 CHCs, 4048 hospitals and a workforce of 345,514 in 2001-02. The way in which the sector is financed determines the effectiveness of service delivery and requires an under-standing of the financing mechanisms in this sector.

Health being a State subject, the sector is financed primarily by the State Governments. The per capita total health spending was estimated to be around US$23 during 1997-2000 (World Bank 2003). As compared to the levels of spending by countries such as Sri Lanka (US$31) and Thailand (US$71), the spending in India is substantially low. A break-down of health expenditure reveals that expenditure by the public sector in these countries is twice that of India. Substantially higher levels of health outcomes in these countries as compared to India clearly indicate that there is a strong case to markedly increase public sector spending on health, as stated in the National Health Policy 2002 and the National Common Minimum Programme (CMP) 2004. The primary source of public financing is the general tax and non-tax revenues. These include grants and loans received from both internal and external agencies, which face competing demands from various ministries and departments. This pool of resources is used to finance the Centre's and States' own programmes. The Central Government plays a catalytic role in aligning the States' health programmes to meet certain national health goals through various policy guide-lines as well as financing certain critical components of centrally sponsored programmes implemented by the State Governments. In addition to tax revenues, a meager amount is also raised through user charges, fees and fines from the sector, and further supplemented through grants and loans received from external sources. In the case of local governments, the respective State Governments largely finance their health programmes. Local governments do raise resources through user charges and certain fees though the quantum varies widely from State to State. Overall, the sector is under-funded, not without consequences.

An issue that is often raised in the context of inadequacy of resources to the sector is the efficiency of the resources allocated. The current level of funding to the sector is grossly inadequate as brought out by various studies over the past decade or so. A concern that is equally voiced is how judiciously the funds allocated currently are utilized. Countries such as Bangladesh and Indonesia spend about US$14 and US$19, respectively, per capita on health; relatively less than the per capita spending by India (US$23). But the health outcomes in terms of child mortality are considerably better in these countries-74 for Bangladesh and 45 for Indonesia compared to 93 for India (World Bank 2003). This clearly reveals that the current level of spending has the potential to improve the outcomes if properly allocated. In the following sections an attempt is made to understand the present trends and structure of public spending on health to critically evaluate the above issues in detail.

2.9.1 Trends in Public Spending on Health in India:

Public spending on health in India gradually accelerated from 0.22% in 1950-51 to 1.05% during the mid-1980s, and stagnated at around 0.9% of the GDP during the later years (ie. spending by only Central and State health departments). Of this, recurring expenditures such as salaries and wages, drugs, consumables, etc. account for more than 90% and is on the rise in recent years. In terms of per capita expenditure, it increased significantly from less than Re 1 in 1950-51 to about Rs 215 in 2003-04. However, in real terms, for 2003-2004 this is around Rs 120. Estimates, irrespective of the definition, reveal that the per capita spending by the Government is far below the international aspiration of US$12 recommended for an essential health package by the World Development Report 1993 (World Bank) and, again by the Commission on Macroeconomics and Health (World Health Organisation 2002) CMH (WHO) for low-income countries.As a result of stagnant budgetary allocations, the quality of care suffered substantially and adversely impacted on the utilization of government

services by households. Besides, health services that were earlier being provided free were in some cases charged, forcing patients to seek private health care.

2.9.2 Impact on Equity due to low Public Spending:

The results of the NSS of 1986-87 and 1995-96 showed a considerable decline in the utilization of public health services by the poor, especially the rural poor (Table 4). Besides, the study also showed that the rich consumed public services three times more than the poor. The ratio of access to admission between the lowest 10% quintile and the richest 10% was reported to be 6.1 and 2.2 between the below poverty line (BPL) and the above poverty line (APL) populations. The 52nd Round of the NSS provided insights into the quintile wise health-seeking behavior. As per this data, of the poor who availed of services, 61% used public facilities com-pared to 33% among the rich. The poorest, however, benefit relatively more from spending on primary care only (Mahal 2001). This is primarily on account of the poor quality and irregular supply of these services which dissuade the rich from accessing them. Further, many of the services that benefit the poor are, to some extent centrally funded vertical programmes such as immunization, ANC, TB, Malaria, Leprosy, etc. The inequity in the access to and distribution of public health services has been a concern because of the extent of impoverishment households face on account of ill health, and catastrophic illnesses in particular.

2.9.3 Centrally Sponsored Schemes-National Health Programmes (1991-2003):

Of the total combined central budget 70% is spent on National Health Programmes related to the disease control programmes and family welfare. The allocation of funds for the 5 National Communicable disease control programmes (Leprosy, Malaria, TB, Blindness and HIV/AIDS) went up from 18.6% of the budget during 1991-92 to 26.8% of the budget in 2002-03, accounting for Rs 704.3 crore. Due to limited expansion of the budget, malaria got gradually

crowded out giving way to HIV/AIDS. In 1991-92, malaria accounted for over 66% of the total out-lay under disease control programmes of the Department of Health, shrinking to just 29.3% in 2002-03. During this period there was a corresponding increase in the HIV/AIDS programme: from 5% to 34.3%. In gross terms, the disease control programmes got a higher allocation as they were all funded under World Bank projects. The quantum of external funding received by the Department of Health on the communicable disease control programmes went up from a negligible amount Another major national programme that is centrally funded in substantial measure is the Family Welfare Programme. Under this programme, recurring expenditures of subcentres, the RCH Programme and free supply and social marketing of con-traceptives are the main activities receiving 40%, 20% and 12%, respectively, of the budget allocations.

2.10 Health Expenditure by the Central Government:

Major policy initiatives and reforms relating to health emanate from the Ministry of Health and Family Welfare (MOHFW), which plays a crucial role in financing this sector. The Union Ministry of Health and Family Welfare consist of three departments. The department-wise break-up of the Health Ministry's budget suggests that over one-third of the budget is spent by the Department of Health, while roughly two-thirds goes to the Department of Family Welfare. The Indian Systems of Medicine and Homeopathy (ISM&H) (AYUSH) Department receives a paltry 2%-3% of the total budget of the Ministry. There are 5 important aspects to the nature of central spending in recent years:

1. The gradual reduction in the proportion of funds released to States at a time when the States were themselves under fiscal stress;

2. The sharp reduction in capital investment in public hospitals at a time of technological innovation, shifts in the epidemiology and health needs and expectations of the people, besides the sheer increase in disease burden in absolute terms;

3. Increased subsidy for their own employees;

4. Low priority to preventive and promotive health; and

5. Allocative inefficiencies under the National Health Programmes

2.11 Centralization of Funds and Inadequate Capital Expenditures:

The Ministry implements certain schemes such as the Central Government Health Scheme (CGHS), national disease control programmes, etc. by itself, and other schemes through the State Governments. A large part of the Ministry's budget is passed on as grants-in-aid to States for implementing various national health programmes. Such transfers accounted for about 43% of the total budget of the Ministry in 2003-04. Even though the size of the Central health budget has grown considerably from Rs 1670 crore in 1991-92 to Rs 7851 crore in 2003-04, transfers to States as a proportion of the total budget of the Ministry declined sharply from nearly 57% to 44%. This in effect reveals the increasing role that the Central Government has been assuming in health service delivery. As a result, roles such as stewardship and governance that the Central Government is expected to play are undermined.

The share of the Central Government expenditure on health, including grant-in-aid to States, constitutes over a third of the combined expenditure by the States and Centre. Figure 3 shows that during the period 1991-2003, the over-all increase in central allocations was 4%-6% annually. Despite this, there was a sharp decline in capital expenditure, which fell from about one-fourth of the Ministry's expenditure to less than 6.7% of the net MoHFW expenditure (excluding grant-in-aid to States and UTs but including capital expenditure incurred by the Ministry of Urban Development on hospitals such as RML and LHMC). During the same time, allocations for materials and supplies for central sector public hospitals also fell from 22% to 15% to accommodate the increase in

salaries from 56% to 63% on account of the Fifth Pay Commission. This has had an adverse impact on the declining level of quality in these once premier hospitals which are expected to act as a benchmark in the quality of care.

2.12 CGHS-a mandatory Social Health Insurance Scheme for the Central Government Employees:

Six per cent of the combined budget of the department or 18% of the budget of the Department of Health was spent on 44 lakh beneficiaries or 0.5% of the country's population under the Central Government Health Scheme (CGHS). Since the introduction of contracting of private hospitals for providing health services and permitting beneficiary members to purchase drugs at pharmacy shops in 2000, there has been an escalation in expenditure under this programme. Over and above Rs 503 crore incurred on the CGHS by the Department of Health, an additional Rs 200 crore was spent by the various administrative departments on medical reimbursements of their serving employees during 2001-02. All taken together, the outpatient expense under the CGHS per card is estimated to be about Rs 3478 per year and the inpatient expense per card issued to retired civil servants and dependents is Rs 6692 per year.

2.13 Low Priority for Preventive Health Care:

An important public health function that governments are expected to perform is expanding access to public goods by focusing on preventive and promotive education. Preventive and promotive education does not mean only disseminating disease-specific messages to raise awareness among people for behavior change but also includes a range of other aspects such as laws for the use of helmets for preventing road accidents, or providing nutritional information to consumers regarding food products, on risky behaviors and exhorting people to adopt healthy lifestyles such as non-consumption of addictive substances such as tobacco, daily exercise, healthy diets, etc. In India, such an interventionist role

of the State is negligible with some information, education and communication (IEC) activities undertaken under the National Health Programmes. This is a serious omission, given the huge treatment costs that will be required to cope with the emerging epidemic of non-communicable diseases.

Under the NHP, the amount spent on preventive care aimed at prevention and behaviour change during the financial year is an estimated 21% as given in the Table 5; of this a large amount was for vaccines under the universal immunization programme (UIP). In terms of use of mass media and inter-personal communication, the expenditure under this head in the National Programmes is a mere 2% of the overall budget. For TB, the amount spent during 2001-2002 on preventive care is very low, as most of the expenditure was on drugs, equipment and staff. As people are unaware of the free services under the National Health Programmes, a large number of them continue to go to the private sector for treatment. Expenditures under the Reproductive and Child Health (RCH) Programme pertain to the immunization programme which helps avoid vaccine-preventable diseases but is of limited value in achieving the goal of bringing down IMR and under-5 child mortality rate for which commensurate investments have to be made on propagating a range of behavioral practices. These include breastfeeding, use of oral rehydration solution (ORS), healthy practices such as consumption of boiled water or washing the hands with soap, prevention of acute respiratory infections (ARI), etc. These interventions are as important for child health as the use of vaccines for vaccine-preventable diseases. Since preventive and promotive expenditures are an investment on the demand side, it is necessary to not only increase the level of expenditure under this component but also implement these activities more rigorously to reduce the disease load and public expenditures on curative care.

2.14 Health Expenditure by State Governments:

At the State level, public health is also financed through general tax and non-tax revenue resources as the cost recovery from the services delivered has been negligible, at less than 2% (Selvaraju 2001). As a result, resource allocation to this sector is influenced by the general fiscal situation of the respective State Governments. For instance, the implementation of the recommendations of the Fifth Pay Commission during the late 1990s resulted in an increase in the fiscal deficit and a general resource crunch. Evidence from other countries also suggests that whenever there is a fiscal consolidation and stress, social sectors like health and education are targeted for pruning expenditures and reducing budget allocations (Tanzi and Schuknecht 2000). The figures presented in Table 7 confirm the above findings. The budgetary allocations to the health sector during the year 1999-2000 declined to the extent of about 2 percentage points as compared to 1985-96. Despite reduction in the health budget from 7.02% in 1985-86 to 4.97% in 2003-04 the fiscal deficit as a percentage of the GSDP recorded an increase, implying that allocation to health does not necessarily accentuate fiscal deficits.

Public spending on the health sector in the States increased to about 0.9% of the GDP as per the estimates for 2003-04, from 0.8% in 1975-76 as seen in Fig 4. During the decade 1975-85, it registered a substantial increase and reached a high of 1.05%. Thereafter, it declined steadily due to the general fiscal stress during the late 1980s followed by the reform measures initiated in the 1990s. The severity of the fiscal strain during the late 1980s forced the State Governments to introduce austerity measures and the 'soft' sectors such as health were targeted for expenditure compressions. Similarly, when reform measures were initiated at the Centre during the early 1990s, fiscal transfers to States were compressed leading to reductions in health sector allocation at the State level. The recommendations of the Fifth Pay Commission in 1997 forced the governments to increase the budget to meet the increased salary cost of public sector

personnel. However, these improved allocations could not be sustained beyond 1999-2000 when deceleration set in again. By the year 2001-02, the relative allocation to the sector reached levels closer to those prevailing in 1975-76.

Conclusion:

The review presented above clearly brings out the experiments in tracking of resources for health in general and HIV/AIDS segment in particular. One can note from the above discussion that such efforts are quite scanty in the Indian context. The present exercise tries to fill this gap by estimating resource flows to HIV/AIDS in a district of India. The focus here is to see whether one can really attempt such a tracking exercise in the background of data problems in the Indian context.

The aim of NHA is to measure the total volume of financial expenditures and present them in such a way that the flows of resources between different units in a health care system are immediately visible to the managers of the health sector.

There are eight main sets of studies that have previously been undertaken to estimate the amounts spent on HIV/AIDS-related activities according to NHA methodology. Some focused only on expenditures incurred by the public sector, whereas others provided more information on sources and uses of funds for HIV/AIDS, although falling short of applying the full-fledged NHA method.

Every disease has its own type of health care functions. Therefore, UNAIDS has developed the NASA framework to get clear picture about track and quantify the resource flows for preventing and managing the deadly disease.

The findings of Countries which have adopted NASA Methodology are useful to inform who will finance what priority activities in the country, and whether the country could ensure the sustainability of the resources in the future by looking at the trends. It would expect that the government would provide increased funds year by year. The information could also be used to overview the transparency of the donor funds, how the fund has been used and the resulted achieved.

The global economic crisis that began in 2008 has been linked to decreased donor spending for the HIV and AIDS epidemic in low- and middle-income countries. In October 2009, UNAIDS released a series of country studies on the impact of the economic crisis on HIV prevention and treatment programmes. The summary report states "the negative impact of the crisis on HIV and AIDS programmes is real and getting worse." For example, the percentage of countries where antiretroviral treatment programmes were adversely affected by reduced external funding rose from 11% to 21% from July 2008 to July 2009. Prevention programmes were identified as the most likely to be worst affected in all countries receiving external funding. If universal access to HIV prevention, treatment, care and support is to be reached by 2015 - the date provided in the Millennium Development Goals (MDGs) – there needs to be a dramatic increase in the level of funding for HIV and AIDS.

However, donating more money is not enough. Many of the countries where the largest donations are being received are under-resourced and lack the infrastructure to absorb the funding. Higher-level bodies – those at the top of funding chains – need to take a greater responsibility for the actual implementation of money on the ground. There is a great emphasis amongst the international community on raising money for HIV and AIDS, but once that money has been allocated, not enough attention seems to be paid to where it goes.

The President's Emergency Plan for AIDS Relief, also known as PEPFAR, is America's initiative to combat the global HIV/AIDS epidemic and is now part of the Global Health Initiative. Since 2004 PEPFAR has committed more than $30 billion to funding for the AIDS epidemic.1 PEPFAR continues to represent the largest financial commitment by a single country responding to HIV and AIDS worldwide.

The present exercise makes a modest attempt in tracking flows of resources to HIV/AIDS segment in the background of non availability of such a information in the present day context.

In the ensuing chapter and attempt is made to present the methodology of the study including sample frame and the data sources used for the study.

CHAPTER III

Methodology of the Study

This chapter provides an overview of study design and methods used in the household survey. It details the selected study area, the sample size used and respondent selection procedure. It also discusses the research instruments, the data collections, data management and analysis, ethical considerations and constraints and limitations of the methodology.

In addition to the household survey, a survey among health care providers was carried out. The objective of the provider survey was to assess out-of-pocket expenditures on HIV/AIDS services and commodities by using utilization and costing data from health service providers. While comparing results from both the household and provider survey more robust findings may be obtained. In this chapter, the methodology of the study has been presented in the following sections.

1. Geographical area and population coverage
2. Sample Selection
3. Tools of Data Collection
4. List of Information Sought to get the Household Expenditure on various HIV/AIDS related services
5. Estimation Procedures
6. About Financial flows for HIV/AIDS
7. Broad activities which are covered under the NASA
8. District HIV/AIDS Accounts: Our Approach
9. Data Sources

3.1 Geographical area and population coverage:

3.1. A Karnataka State – Dharwad District in Indian Sub-Continent:

India is one of the largest and most populated countries in the world, with over one billion inhabitants. Of this number, it is estimated that around 2.3 million people are currently living with HIV.

At the beginning of 1986, despite over 20,000 reported AIDS cases worldwide, India had no reported cases of HIV or AIDS. Later in the year, India's first cases of HIV were diagnosed among sex workers in Chennai, Tamil Nadu. It was noted that contact with foreign visitors had played a role in initial infections among sex workers, and as HIV screening centres were set up across the country there were calls for visitors to be screened for HIV. Gradually, these calls subsided as more attention was paid to ensuring that HIV screening was carried out in blood banks. But now Tamil Nadu, Maharashtra, Andra Pradesh and Karnataka states have recorded the highest levels of HIV prevalence

Karnataka, a diverse state in the southwest of India, has a population of around 53 million and is one of the leading states in economic development. The state's GDP at constant prices in 2002-03 stood at Rs.72, 399 corers accounting for 5.5 per cent of the national GDP. The State witnessed a healthy 6.5 per cent CARG in the GSDP for the ten year period of 1994-2003, being the highest among the leading states in the country.

HIV prevalence among antenatal clinic attendees exceeded 1% from 2003 to 2006, and dropped to 0.5% in 2007. Districts with the highest prevalence tend to be located in and around Bangalore in the southern part of the state, or in northern Karnataka's "devadasi belt". Devadasi women are a group of women who have historically been dedicated to the service of gods. These days, this system has evolved into sanctioned prostitution, and as a result many women from this part of the state are supplied to the sex trade in big cities such as Mumbai. The average HIV prevalence among female sex workers in Karnataka

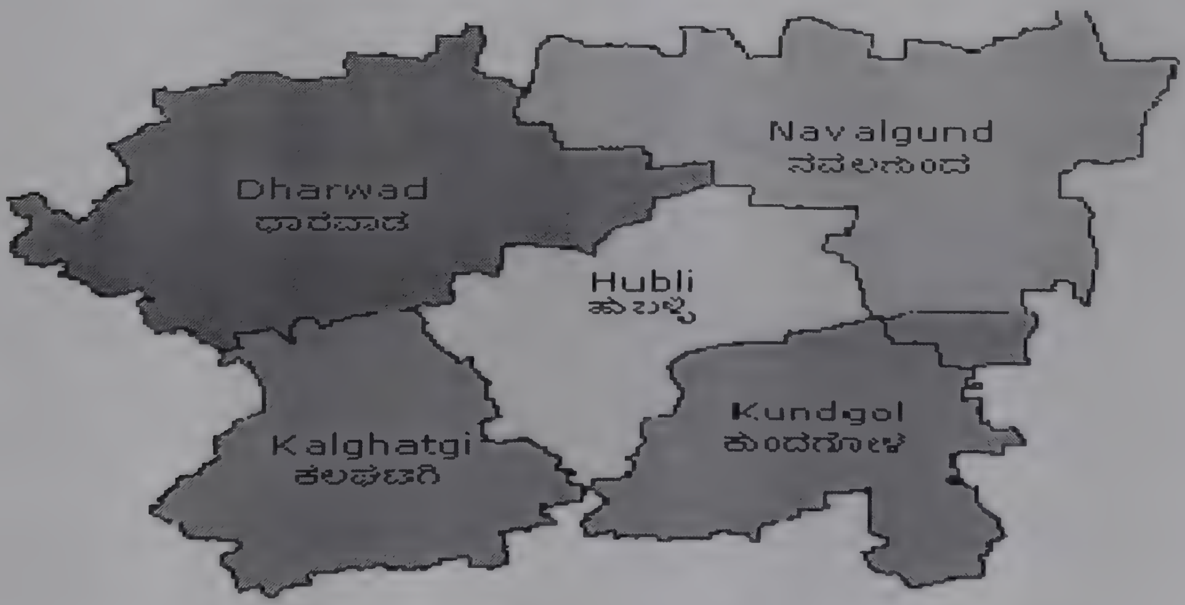
was just over 5% in 2007, and 17.6% of men who have sex with men were found to be infected.

The first person with AIDS in Karnataka was identified in 1988. Since then, there is evidence that the HIV epidemic has reached a substantial portion of the population. In the general population, data from antenatal clinic attendees suggest that the overall prevalence of HIV in the adult population is high: approximately 1.5% according to the 2003 and 2004 antenatal sentinel surveillance. The sentinel surveillance data also pegs the prevalence of HIV among those attending STD clinics between 10% and 20%.

Based on an estimated prevalence of 1.5% in the general population (reflecting the prevalence among antenatal women) there are more than 500,000 persons already living with HIV in the state. So far the epidemic has remained largely hidden, with only a fraction of the estimated number of HIV positive having been tested or reported in official figures of HIV and AIDS cases.

3.1. B About study district:

Map: 3.1. The Dharwad District:



Dharwad which is our study district is one among the 30 revenue and administrative districts is situated in the western sector of the northern half of the Karnataka State. The district encompasses an area of 4263 sq. kms lying

between the latitudinal parallels of $15^0 02'$ and $15^0 51'$ North and longitudes $73^0 43'$ and $75^0 35'$ East.

Dharwad district comprises five taluks- Dharwad, Hubli, Kalaghatagi, Kundagol, and Navalgund. Based on the agro-climatic conditions, the district can be divided into *Malnad*, *Maidan* (dry tract) and the transitional belt. The annual rain-fall in the *Malnad* tract varies between 838 mm and 939 mm. The transitional belt receives rains less than 777 mm per annum, the lowest being 612 mm. *Malenadu* is marked by a chain of low hills and valleys with comparatively heavy rainfall. The greater part of this region remains sparsely populated. The *Maidan* or the black soil plain to the eastern belt is an extensively cultivated area. Cotton, jawar, chilly and wheat are the main crops. The area supports a sizeable population residing in large and compact villages. Households in Malenadu heavily depend on forests and other common lands for their livelihoods.

Table No 3.1 Dharwad District Statistics at a Glance

Sl No	Particulars	Period	Unit	No	S No	Particulars	Period	Unit	No
1	Total Villages	2001 Census	No.s	390	14	Population Dencity (Per Sq Km)	2001 Census	No.s	377
2	Inhabited Villages	2001 Census	No.s	372	15	Total Banks	31/03/2007	No.s	209
3	uninhabited Villages	2001 Census	No.s	18	16	Co-operative Societies	31/03/2007	No.s	717
4	Total Gram Panchayats	2005	No.s	127	17	Members in Co-operative Society	31/03/2007	No.s	582716
5	Total Population	2001 Census	No.s	1604253	18	Total Motar Vehicles	31/03/2007	No.s	243744
6	Rural Population	2001 Census	No.s	722336	19	Post Offices	31/03/2007	No.s	217
7	Urban Population	2001 Census	No.s	881917	20	Telephone Connections	31/03/2007	No.s	93260
8	S.C. Population	2001 Census	No.s	131969	21	Net Income (current prices)	2003-04	In Lakhs	369586
9	S.T. Population	2001 Census	No.s	70442	22	Per Capita Income (current prices)	2003-04	In Rs	22281
10	Religionwise Population	2001 Census	No.s		23	Primary Schools	31/03/2007	No.s	842
	Hindu	2001 Census	No.s	1221335	24	High Schools	31/03/2007	No.s	191
	Muslim	2001 Census	No.s	315177	25	Fair Price Shops	31/03/2007	No.s	540
	Christians	2001 Census	No.s	27634	26	Geographical Area	2005-06	Hectares	427329
	Jain	2001 Census	No.s	25089	27	Forest Area	2005-06	Hectares	35235
	Others	2001 Census	No.s	15018	28	Net Sowing Area	2005-06	Hectares	325549
11	Literacy	2001 Census	Percentage	70.87	29	Irrigated Area	2005-06	Hectares	42899
12	Net Income (current prices)	2010-11	In Lakhs	1260892	30	G DDP (current prices)	2010-11	In Lakhs	1391613
13	Per Capita Income (current prices)	2010-11	In Rs	77480	31	NDDP (current prices)	2010-11	In Lakhs	1260892

Table 3.2: DHARWAD DISTRICT HEALTH INFRASTRUCTURE (2006)

Community Health Centre(s)	6
Primary Health Centre(s)	33
Primary Health Unit(s)	12
A N M Sub centre(s)	144
Average Distance to Nearest Community Health Centre in Kms	8
Average Distance to Nearest Primary Health Centre in Kms	7
Average Distance to Nearest Primary Health Unit in Kms	2
Average Distance to Nearest A N M Sub Centre in Kms	1
Community Health Centre - Building(s)	8
Primary Health Centre - Building(s)	40
Primary Health Unit - Building(s)	11
A N M Sub Centre - Building(s)	95
Ambulance(s)	6
No of Habitations with Telephone Facility	47
Blood Banks(s)	2
Health Centre Latrine(s)	78
Health Centre Drinking Water Facility	80
Operation Theatre(s)	39
No of Beds	220
Pharmacy	59
No of Private Doctors	395
Medical Officers – Sanctioned	66
Medical Officers – Working	72
Nurses – Sanctioned	142
Nurses – Working	175
A N M - Sanctioned Posts	337
A N M – Working	327
Medical Officer Quarter(s)	24
A N M Quarter(s)	82

Table No 3.3: District wise Selected Health Status in Karnataka, 2010

District	Infant mortality rate		Life expectancy at birth	
	Actual	Rank	Actual	Rank
Bagalkot	48.9	8	63.3	29
Belgaum	34.4	25	70.5	2
Bellary	40.5	19	68.8	8
Bidar	50.4	4	65.9	19
Bijapur	51.2	2	65.2	26
Dharwad	52.7	1	64.4	28
Gadag	50.4	4	65.3	25
Gulbarga	51.2	2	65.5	22
Haveri	50.4	4	64.8	27
Koppal	49.6	7	66.1	17
Raichur	45.1	12	66.5	16
Uttara Kannada	45.1	12	65.5	22
Bangalore	34.4	25	70.1	5
Bangalore Rural	36.7	23	69.2	6
Chamarajanagar	43.5	16	66.1	17
Chikkaballapura	35.4	24	68.4	10
Chikmagalur	47.3	9	65.8	21
Chitradurga	41.2	18	67.3	14
Dakshina Kannada	33.6	29	70.2	3
Davanagere	39.7	21	68.5	9
Hassan	45.1	12	67.9	12
Kodagu	47.3	9	65.9	19
Kolar	45.1	12	66.8	15
Mandya	47.3	9	65.5	22
Mysore	42.8	17	67.5	13
Ramanagara	38.6	22	69.2	7
Shimoga	34.4	25	70.2	3
Tumkur	40.5	19	68.0	11
Udupi	34.4	25	70.6	1
Karnataka	14.3		2.0	

Source: Karnataka at a Glance

3.2 Sample Selection:

3.2. 1 Status of the epidemic in the Study district

Table No:3.4 HIV+Cases,AIDS Cases and AIDS deaths in Dharwad District

Year	**HIV +ve**	**AIDS cases**	**Death due to AIDS**	Total
1987 to December 2004	3298	317	62	3236
2005	3232		197	3035
2006	3751	462	204	3547
2007	3202		232	2970
2008	2744		156	2588
2009	1309		99	1210
Total HIV+ in Dharwad District(1987 to Jun 2009)				16586

Source: Districts AIDS Prevention Society & ART Centre

In all 349 patients were surveyed who were selected randomly and the availability factor as well as accessibility factor played important role in the selection process.

3.2.2 Sampling Design:

Table No: 3.5 Sample Size

Sl No	Sources of Data Collection	Sample size
1	Patient / affected person Survey	350
2	NGOs	5
3	Parastatals hospitals	3
4	Private clinics	2
5	Primary health centres	2
6	Voluntary counseling and testing centres	3
7	Prevention of mother to child counseling and testing centres	2
8	Clinical laboratories and diagnostic centres	2
9	Anti retroviral therapy centres (ART)	1

3.3 Tools of Data Collection:

3.3. 1 Primary Data:

The primary data have been obtained from different sources, namely

1. **Patient / affected person** Survey to elicit how resources are being spent in the form of Out of Pocket Spending (OOPS) on HIV/AIDS

It was really difficult task to identify the HIV/AIDS patients in the district However with the active support and co-operation of the NGOs and a few socially committed Doctors who treat these patients it was possible for us to make a dent into the domain of People Living with HIV/AIDS (PLWHA). We also we approached service proving institutions. There, we talked to all the patients visiting the institute and asked whether he/she is an affected person residing in Dharwad district. The persons who were willing to provide the information have been selected for getting detailed information about spending pattern.

- **Ethical issues:**

All the participants involved in the study were fully informed about the nature of the study, the research objectives, and the confidentiality of the data and their full consent for their participation in the study was obtained. The potential benefit in participating in the study was explained to all the participants.

During the introduction, respondents were told that they can skip any question they did not like to answer. At the end of interview they were given an opportunity to make comments or ask any questions to the interviewers. Individual interviews were conducted in a private setting. No one but interviewer and the respondent were present during the interview. Interviewers were

instructed to terminate or change the subject of discussion if an interview was interrupted by anyone. An adequate time for the conducting the survey was planned to visit the respondents repeatedly if required. The confidentiality of all participants enrolled into this study was protected to the fullest possible extent. No names were entered into the computerized database. Moreover, all researchers received strict instruction about the importance of maintaining confidentially. This was stressed during the training to the research team.

2. NGO Survey to get the nature and quantum of expenditure relating to HIV/AIDS

3. Data from service providing institutions in the district
    a) Parastatal hospitals (hospitals managed by different departments, such as , KSRTC, Railway and Police)
    b) Private clinics
    c) Primary health centers
    d) Voluntary counseling and testing centers
    e) Prevention of mother to child counseling and testing centers
    f) Clinical laboratories and diagnostics centers
    g) Anti retroviral therapy (ART) centers

3.3.2 Secondary Data:

The major task of using the budgetary expenditure data relating to any line items in the budget poses a typical conceptual problem. As State government makes expenditure for the state as a whole it would be difficult to cull out the specific proportion for a district from the main pool. In order to overcome this problem we had collected secondary data from following sources.

a) Karnataka state AIDS prevention society (KSAPS)
b) Karnataka health promotion trust (KHPT)

Karnataka State AIDS Prevention Society (KSAPS) directly funds ART Centers, which is the method of managing the disease. This information is also available districtwise and comprises public funds. We visited the ART Centers in Dharwad district to collect the public expenditure on HIV/AIDS. Along with this, other official records of the office of the District Health Officer, Dharwad district helped us to quantify the public expenditure incurred for HIV/AIDS within the district.

Karnataka Health Promotion Trust (KHPT) supports NGOs operating in the domain of HIV/AIDS in different districts. Most of the NGOs are supported by money received from abroad. It also directly supports VCTCs and Prevention and Awareness programs in different districts.

The NACO guidelines in India have made it mandatory that all external fund need to be canalized through NACO at the national level and through state specific Health Promotion Trusts at the state level. Through the NGO records operating in the district (pertaining to HIV/AIDS) we could know how much money is spent in the district. We also visited VCTCs in the district to collect their expenditure pattern.

Thus, one can easily get the external resources flowing into different districts and for the district of Dharwad in this case.

3.4 List of Information Sought to get the Household Expenditure on various HIV/AIDS related services:

Table No 3.6 Expenditure incurred on HIV / AIDS Services collected from the Patients

	Type of HIV/AIDS Services
1	HIV testing
2	Counseling & Psychological Support
3	Condom Usage
4	Sexually Transmitted Disease Treatment
5	i) Awareness
6	ii) Post exposure prophylaxis
7	iii) Blood Safety
8	Prevention and treatment of OIs
9	Palliative Care
10	HB Test
11	HB SAG
12	Venereal Disease Research Laboratory test
13	Sputum
14	CD4 Test
15	Other Clinical
16	Diagnostic Services
17	Antiretroviral Therapy
18	Complementary and alternative medicines
19	Mitigation activistes (ex:Nutritional Support)
20	Terminal Life Care
21	Support for surviving family and orphans
22	Food Items
23	Clothing
24	Livelihood Support
25	Hostel facilities for orphans
	For Pregnant Women
26	HIV testing during ANC
27	Couple Counseling
28	Post testing Counseling for infant feeding
29	Informed Consent for Nevirapine
30	Nevirapine administration to mother during labor
31	Child Monitoring

3.5 Estimation Procedures:

The sample data collected from the HIV/AIDS patients, NGOs and other public agencies was analyzed and presented in the health accounting format using the NASA standards. The expenditures were grouped according to the functional classifications of the internationally accepted criterion. Similarly the classification for Sources, Agents of funds and Providers of Health Care were arranged in the format of System HIV/AIDS Accounting. As far as the household survey was concerned, the data were collected from different patients. Using the average household expenditure on HIV/AIDS the overall average household expenditure (which was in fact per patient expenditure) was calculated for the total surveyed households.

Total Expenditure on Managing the HIV/AIDS incurred by the HHs in the District are summarized as follows:

(i) Average HH_{exp} * Estimated HIV/AIDS Cases in the Village = total exp on HIV/AIDS by the HHs in the villages(TEHIV/AIDS V)

(ii) TEHIV/AIDSV * Estimated HIV/AIDS Cases in the Block= Total expenditure on HIV/AIDS by the Households in the blocks (TEHIV/AIDSB)

(iii) TEHIV/AIDSB * Estimated HIV/AIDS Cases in the dist = Total Expenditure on HIV/AIDS by the HHs in the dist (TE HIV/AIDS D)

Taking this grand average as the basis, the household expenditure was blown up for the district as a whole using the total number of HIV/AIDS patients existing in the district. .

With regard to the expenditure incurred by the NGOs the task was easy as we visited all the NGOs and collected the information. Hence the question of blowing up of such expenditure did not arise at all.

As far as the public expenditure is concerned, it was collected from two sources. Firstly the Karnataka State AIDS Prevention Society (KSAPS) provided data with regard to the expenditure incurred on ART Centers, and other Preventive and other HIV/AIDS related activities. We visited the ART Center in Dharwad district to collect the public expenditure on HIV/AIDS. Along with this, other official records of the office of the District Health Officer, Dharwad district helped us to quantify the public expenditure incurred for HIV/AIDS within the district

Very recently UNAIDS (2009) has pushed into the arena the NASA framework for developing HIV/AIDS Accounts which aims at developing a common comparable package to track and quantify the resource flows for preventing and managing the deadly disease. In the following discussion an attempt is made to present the overview of NASA which is used as the basis for our district level investigation.

The study followed the global National AIDS Spending Assessment (NASA) methodology and guidelines, and made use of standard NASA tools. It considered all the broad-based classifications for HIV and AIDS expenditure across three dimensions (Source, Financing, and Use), which incorporate six vectors (Sources, Agents, Providers, Production Factors, Functions, and Beneficiaries). The study prepared with an end in view of conducting a complete accounting of actual HIV and AIDS expenditures.

A detailed approach was instituted to collect the data, analyze, and report the flow of funds to HIV/ AIDS expenditure. This spending assessment is therefore a reflection of district HIV/AIDS spending categorized by function and beneficiary population.

At the outset the study tries to describe the financial flows for HIV/AIDS and by so doing it raises the following questions:-

3.6 About Financial flows for HIV/AIDS

- Who pays (sources)?
- Who manages the funds (financing agents)?
- Who provides the services (providers)?
- What was provided (functions: prevention, care, psychological support etc).?
- Social mitigation, (other sector activities)?
- Which are the components (Objects of expenditure)?
- Who benefits from such expenditure (beneficiaries)?

Based on the National Health Accounts framework NASA also tries to maintain:

- Consistency across several variables in the preparation of NHA-HIV/AIDS sub accounts
- Use of financial tracking, accounting and costing principles
- Boundaries and functions (health/non-health)

3.7 Broad activities which are covered under the NASA:

ASC 01-Prevention

ASC.02-Care and treatment

ASC.03-Orphans and vulnerable children (OVC)

ASC.04-Programme management and administration

ASC.05-Human resources

ASC.06-Social protection and social services (excluding OVC)

ASC.07-Enabling environment

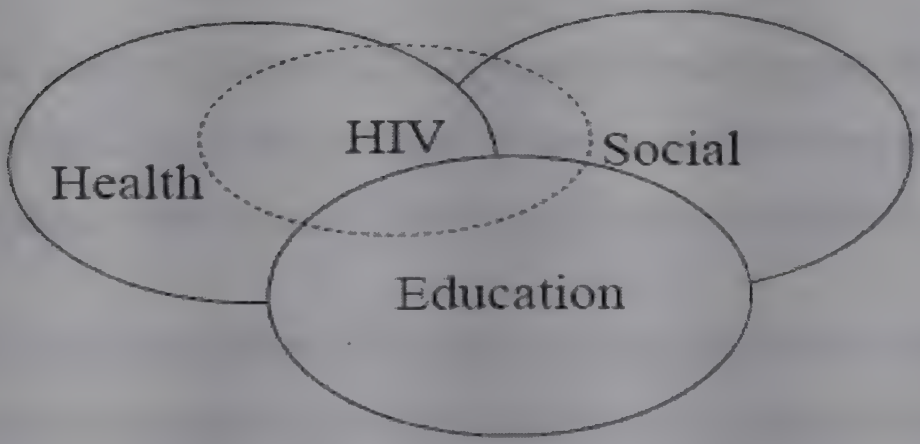
ASC.08-HIV-related research (excluding operations research)

ASC.08-HIV-related research (excluding operations research)

Note: The broad categories have been reproduced here. Each major category has several sub functions

The boundaries of HIV/AIDS Accounts as defined by NASA stretch not only to the domain of health but even to the areas of Social aspects and Education. The broad view of the boundaries is depicted in the figure below.

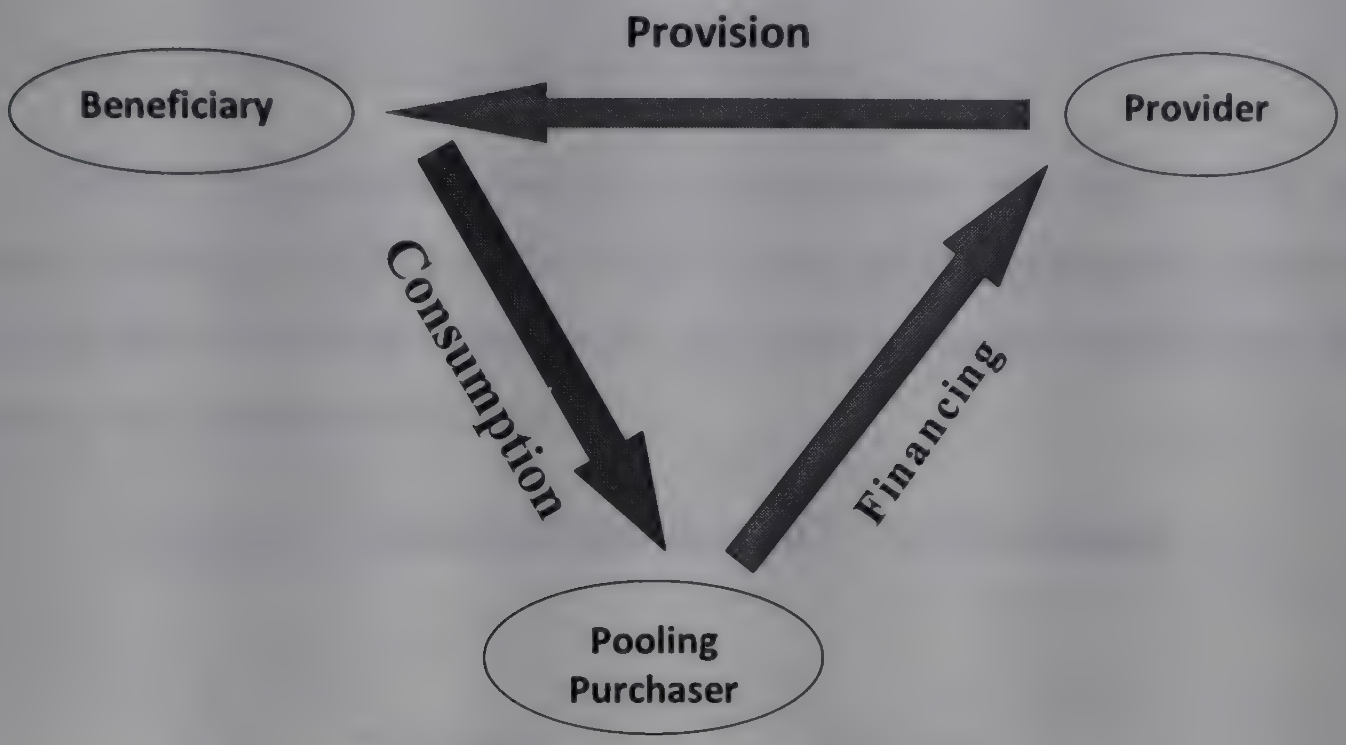
Figure 3.1: Boundaries of NASA



The functions are no longer limited to health expenditures, following the framework of the NHA, but emphasize the tracking of resources towards social mitigation, education, labor, justice and other sectors for an expanded response to HIV/AIDS.

The NASA framework also relies on the tri axial format which serves as the conceptual basis for developing HIV/AIDS Accounts. The following chart shows and establishes the linkage between different entities of the HIV/AIDS Health Care System.

Figure 3.2: Gathering, compiling and cross checking information from three sources



From the chart above we can note that the financing sets the ball rolling and leads to provision of different kinds of service and the consumption of such services takes place either directly or through pooling mechanism.

A further decomposition of the transactions and entities is presented in the chart below which gives the content of different actors and activities. In the case of Financing one can note that there are basically two entities as indicated below.

- Financing Sources
- Financing Agents (Agents transfer funds from the source to the Providers)

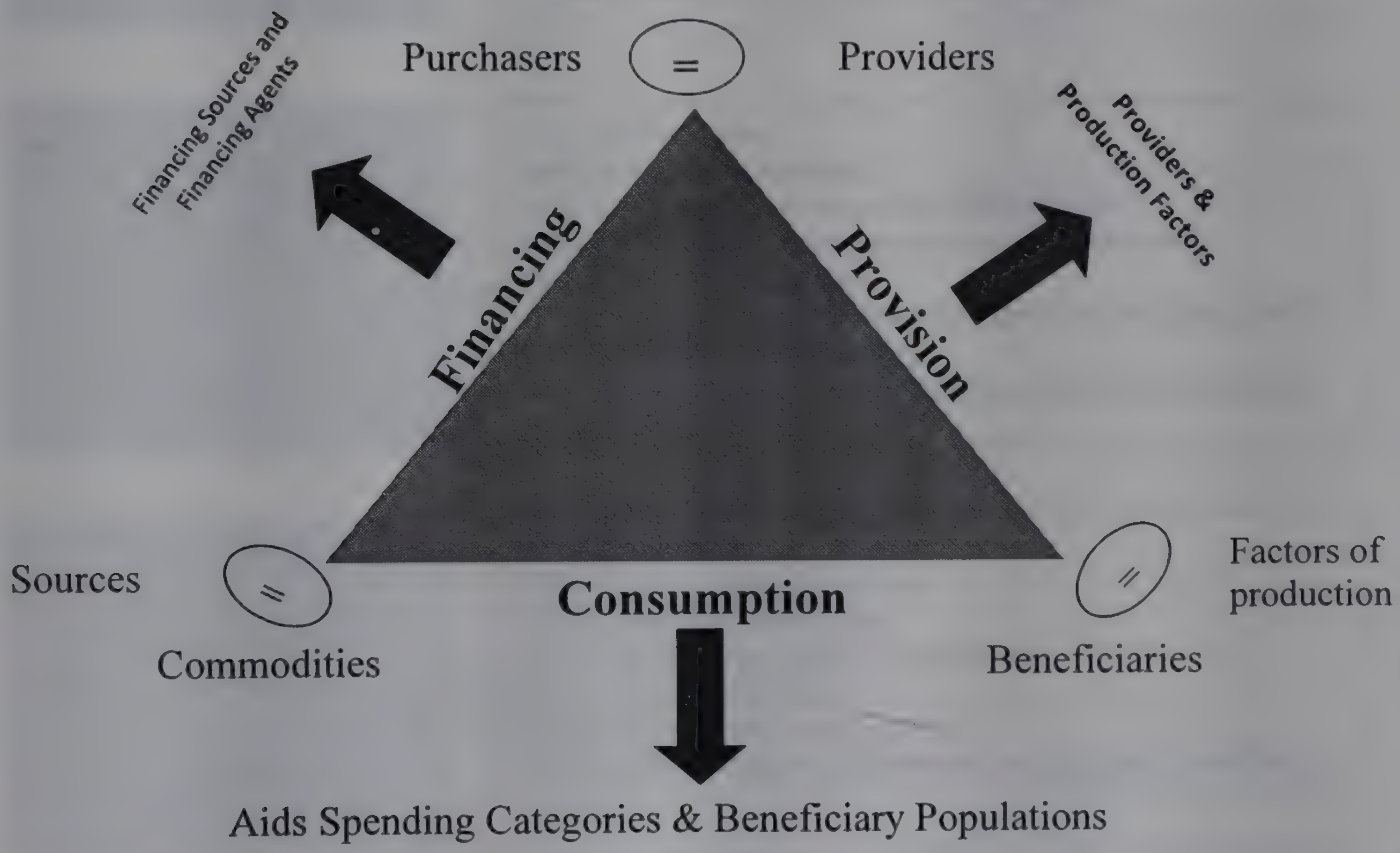
These entities also act ac purchasers of the services / goods in the health care system. Next element consists of Provision which contains entities like the following.

- Providers and
- Factors of Production

These two entities act as providers of services / goods

Thirdly Consumption consists of Beneficiaries and they would be basically spending on different HIV / AIDS related spending categories. One can categorize these consumers based on the social and economic classification. The following chart depicts this picture.

Figure 3.3: Schema of Entities in HIV / AIDS Accounts


Financing Sources and Financing Agents
Purchasers
=
Providers
Providers & Production Factors
Financing
Provision
Sources
=
Commodities
Consumption
=
Factors of production
Beneficiaries
Aids Spending Categories & Beneficiary Populations

In the next step the NASA would try to identify the actors and activities and transactions. The following chart would give the broad view of such entities.

Chart 3.1 Health Care Actors and Activities:

Actors and Activities	
Financing Sources	FS.01-Public funds FS.02-Private Funds FS.03-International funds FS.03.99-nternational funds n.e.c.(not elsewhere classified)
Providers of services and goods	PS.01-Public sector providers PS.02-Private sector providers PS.03-Bilateral and multilateral entities – in country offices PS.04-Rest-of-the world providers (services received outside the country) PS.99-Providers n.e.c. (not elsewhere classified)
Functions	ASC 01-Prevention ASC.02-Care and treatment ASC.03-Orphans and vulnerable children (OVC) ASC.04-Programme management and administration ASC.05-Human resources ASC.06-Social protection and social services (excluding OVC) ASC.07-Enabling environment ASC.08-HIV-related research (excluding operations research)
Target Groups (Or beneficiaries; vulnerable and At-risk Epidemiologically defined populations)	BP.01-PLW HIV BP.02-Most-at-risk populations BP.03-Other key populations BP.04-Specific “accessible” populations BP.05-General population BP.06-Non-targeted interventions BP.99-Specific targeted populations not elsewhere classified (n.e.c.)
Object of Expenditure (budgetary items)	Salary of health personnel, non-health personnel, material and equipment, administration, etc.,

Ideally the NASA acts as a tool to tracking of resource flows for HIV/AIDS in a given region for the specified period of time. The basic feature of the above stated classification scheme is that the categories are mutually exclusive and exhaustive. Using standardized classifications for resource tracking allows both international comparisons and comparisons at the country level over the period of time. Such tracking would also help national as well as regional strategic action plans. In the ultimate analysis the HIV/AIDS Accounts would act as an inventory of all resources addressed to HIV/AIDS. Utilization of such data would be helpful for AIDS program managers/policy and decision makers.

3.8. District HIV/AIDS Accounts: Our Approach:

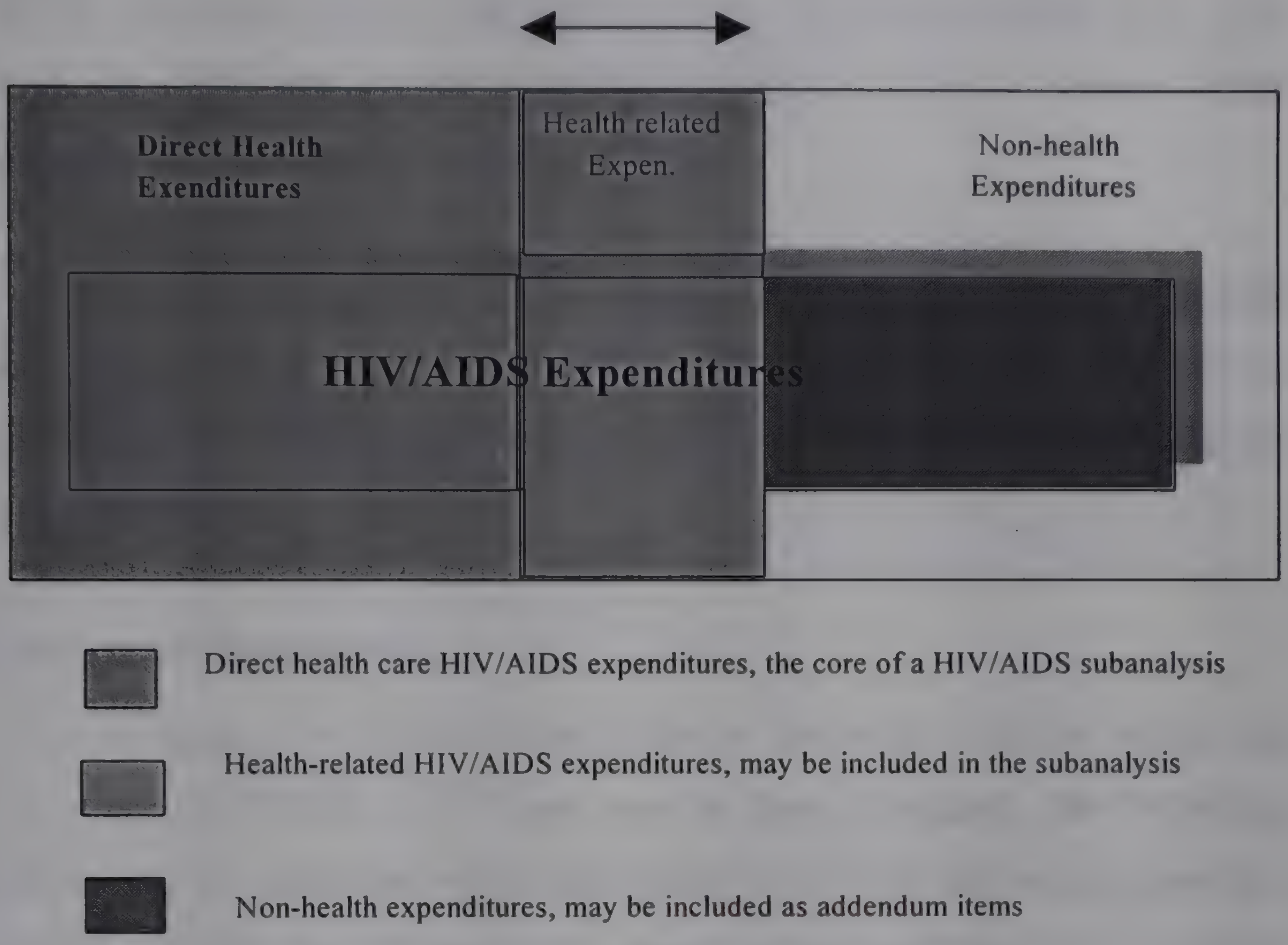
At the outset, it is essential to demarcate the boundaries of HIV/AIDS Accounts and then list down the Actors that are present in the health care system in general and HIV/AIDS domain in particular. The boundaries that need to be defined consist of the following major heads.

i. Expenditure Boundary
ii. Time Boundary
iii. Functional Boundaries

3.8.1. Expenditure Boundary:

Any exercise which aims at developing Health Accounts or for that matter thematic accounts like HIV /AIDS Accounts should first set the boundaries of related expenditures. The following chart would define the expenditure boundaries of HIV / AIDS Accounts

Chart 3.2: Expenditure boundaries of a NHA HIV/AIDS Sub Analysis


Direct Health Exenditures
Health related Expen.
Non-health Expenditures
HIV/AIDS Expenditures
Direct health care HIV/AIDS expenditures, the core of a HIV/AIDS subanalysis
Health-related HIV/AIDS expenditures, may be included in the subanalysis
Non-health expenditures, may be included as addendum items

3.8.2. Time Boundary:

Setting the time boundary of Health Accounts requires that a choice be made about the period (fiscal/calendar year) for which the expenditure data would be presented in the accounting matrices and, secondly, the accounting practice (cash/accrual accounting) to be followed. The present study focuses on the financial year of 2007-08 and all the money transactions relating to health in this year have been considered.

Government expenditure data are usually available for fiscal years. It is expected that the legally recognized entities (NGOs, Private Practitioners, Corporate Health Care Facilities, etc) would also be maintaining records on a fiscal year basis to comply with tax and audit related regulations. For households and the informal private providers, however, the survey data collected from them about health care spending would be referring to the last calendar year. In such cases, the need is felt to convert the calendar year data to fiscal year data

following the methodology outlined in the WHO *Guide* (2003) so that the final HIV AIDS Accounts matrices are presented for the chosen fiscal year. The choice of the fiscal year as the accounting period is justified because of its relevance to policy making in the Indian context.

Accrual accounting is the preferred method in the construction of health accounts and accordingly the present study would generate data on expenditure actually made for health care activity that took place during the chosen accounting period.

3.8.3. Functional Boundaries:

At the outset, it would be better to know the broad activities which are covered under the NASA and if one goes by these standards, the following activities would be considered while attempting HIV/AIDS accounting exercise. One should consider the following as a broad pointer and there is a scope to redefine and finetune it.

ASC 01-Prevention

ASC.02-Care and treatment

ASC.03-Orphans and vulnerable children (OVC)

ASC.04-Programme management and administration

ASC.05-Human resources

ASC.06-Social protection and social services (excluding OVC)

ASC.07-Enabling environment

ASC.08-HIV-related research (excluding operations research)

ASC.08-HIV-related research (excluding operations research)

Note: The broad categories have been reproduced here. Each major category has several sub functions.

3.9 Data Sources:

The following table would broadly give the list of sources that were used to elicit the necessary information / data from official records.

Table No 3.7 List of Data Sources

Name of the Financing Sources/Agents	Documents Referred
Government 1. Central 2. State	I. Budget Documents II. Annual Reports III. Audit Reports
National Level	National AIDS Control Organization (NACO) I. Annual Reports II. Audit Reports
State Government	Karnataka State AIDS Prevention Society (KASAPS) I. Annual Reports II. Audit Reports
External Funding	Karnataka Health Promotion Trust (KHPT) I. Annual Reports II. Audit Reports
Local Bodies Panchayati Raj and Rural Development Institutions	I. Consolidated Data for the State 1. State Finance Commission Reports 2. Department of Panchayat Raj and Rural Development 3. State Audit Report by the CAG 4. Statistical Abstract

	II. District Level Data by Line items 1. CEO Zilla Parishad : Income & Expenditure Statement 2. Regional/District Fund Audit Report 3. Annual Administrative Report of Panchyats 4. District Panchayat Office
Municipalities	I. State Level Consolidated Data 1. Department of Municipal Administrator 2. State Finance Commission Report 3. State Audit Report II. District Level Sub-head wise Accounting 1. Regional/District Audit Fund 2. Income & Expenditure Statement of Corporations 3. Hand Book of Municipal Statistics
Employees State Insurance Scheme	1. Regional office, Employees State Insurance Corporation (ESIC) 2. Director of ESI Medical Services
Central Government Hospital Services (CGHS)	1. Central Office 2. Demand for Grants-Ministry of Health & Family Welfare
Private Insurance	1. Regional office of Insurance Companies 2. Annual Report of IRDA - for National Figures

Table No 3.7 List of Data Sources (*Contd*)

Name of the Financing Sources/Agents	Documents Referred
Corporate Bodies	1. Annual Reports of respective Corporate Bodies 2. Department of Industries and Commerce, Government of Karnataka 3. Employees State Insurance Corporation, Regional office, Bangalore
NGOs	1. Government Grant-in-Aids (Central Government & State Government) – Budget documents (Demand for Grants) 2. State level/District level Societies for HIV/AIDS, RCH activities: Annual Report/Half yearly Reports 3. External Assistance Report by the Ministry of Finance & FCRA-Report on Contributions to Voluntary Organizations 4. NSS data (52nd Round) on health expenditure on charitable hospitals
Drug Expenditure	1. Central and State Govt. Expenditure on drugs 2. Budget documents - Other departments/MOHFW/Other Ministries 3. Commissioner of Commercial Taxes 4. NSS data for Household Drug Expenditure

** Apart from these data in the present context data need to be obtained from different Society's that are created for different diseases

** At the district level "IN KIND SUPPLIES" need to be quantified and valued at market prices which flow in bulk under the public / NGO health care delivery system.

In this chapter the background information, references and considering all possible financial inputs to develop a matrix of resource flows to HIV/AIDS for the Dharwad District using NASA methodology derived by UNAIDS have been discussed. Using the above stated methodology, an attempt is made in arrive at HIV/AIDS matrices. In the next chapter health status and health care facilities in the Karnataka state and the selected district of Dharwad are presented.

Chapter IV

Health Status and Health Care Facilities in Karnataka State

This chapter makes an attempt to discuss the health status and health care facilities in the state of Karnataka. Different studies have been scanned to figure out the position of the state as well as study district that of Dharwad in this regard. In this chapter, the available health care indicators and facilities have been presented in the following sections.

1. Introduction
2. Health status
3. Health Care Services
4. NRHM Project
5. Human Resources
6. Organization of Health and Family Welfare Department
7. Indicators of Health Status in Karnataka
8. Child Health and Immunization
9. Maternal Health
10. Health Care Activities in Karnataka
11. Mental Health Programme
12. Medical Development Programme
13. Hospital Pharmacy
14. Department of Indian Systems of Medicine and Homeopathy
15. Department of Drugs Control
16. Implications / Significance of the HIV/AIDS trend in Karnataka
17. Nutritional Status

4.1 Introduction:

As per the Constitution of India, the provision of health care by the public sector is a responsibility shared by State, Central and local governments, although it is primarily a State responsibility in terms of service delivery. As we know good health is an important contributor to economic growth in any nation or state.

The importance of good health cannot be minimized as it has been considered as one of the important components of human capital. Good health is an indication of strong mind. Due to its vital importance, economics of health is attracting researchers and policy makers more rapidly in recent decades. It is well said in the theory of human capital that people should invest themselves in terms of education, health and skill development programmes. Health is major segment of human capital. If the human capital is not efficient, physical capital and natural resources cannot be utilized properly. Ultimately, growth can neither be sustained nor be qualitative

Therefore, in this chapter an attempt is made to a careful understanding of financial flow, institutional and Organizational stricter, Delivery of Health Care Services, Health Care Activities, etc of the health sector in the Karnataka state. And also, an attempt is made to examine the overall health care spending by public (by using Budget documents) and households in the state of Karnataka. All the above said pointers would be discussed one by one

4.2 Health status:

Table No: 4.1 Comparison of India with rest of the countries in the World in some of the Health Status Indicators

Regions	Life expectancy at birth	Under Five Mortality	Maternal mortality ratio	Total expenditure on health (% of GDP)
India	**65.4**	**66.0**	**230.0**	**4.2**
Very high human development	80.0	6.2	15.5	11.2
High human development	73.1	19.0	51.1	6.7
Medium human development	69.7	44.2	134.9	4.5
Low human development	**58.7**	**117.5**	**532.2**	**5.1**
Arab States	70.5	48.8	191.8	5.3
East Asia and the Pacific	72.4	26.1	79.4	4.3
Europe and Central Asia	71.3	19.1	29.1	6.3
Latin America and the Caribbean	74.4	22.4	79.9	7.6
South Asia (SAARC)	**65.9**	**69.3**	**251.9**	**4.1**
Sub-Saharan Africa	**54.4**	**129.0**	**618.9**	**6.2**
Least developed countries	**59.1**	**120.1**	**537.1**	**5.6**
Small island developing states	69.6	57.0	..	7.0
World	**69.8**	**58.4**	**175.6**	**6.0**

Source: UNDP, Human Development Report 2011

A look at comparison of some of the important health indicators of India with rest of the regions of the world would give a clear picture of India's health status with the rest of the world. Data related to the indicator show that (above Table) Life expectancy at birth (LEB) in India is the lowest among the average

of all regions, except the average of ‘least developed countries’, ‘low human developed countries and Sub-Saharan Africa. It is disappointing to note that LEB in India is also lower than the average of SAARC (South Asia) countries. Countries with the high human development have the LEB of 80 years, whereas it is only 65.4 years in India, it is around 4 years less than world’s average. Life expectancy at birth is a commonly used indicator as it is the proxy for over all health condition/status and availability of the health facilities for the people in a country. Another important indicator presented in the table is ‘Under Five Mortality’. In this indicator also Indian pattern is observed as it was in LEB. Maternal mortality ratio in India is 230 which is 15 times higher than that of very high human developed countries (15.5). It is pointless to mention that it is lack of health facilities that resulted from lower spending on this sector. Health expenditure as a share of GDP is 4.2 per cent which is the lowest among the average of all regions except SAARC countries. The point to be noted here is that the health expenditure in India is not too high as compared to the average of SAARC courtiers; it is only 0.01 per cent higher than the SAARC countries. Not surprisingly the per capita GDP of India is too lower than the developed countries If the health expenditure as a share of GDP is concerned it shows lower difference, whereas in per capita terms it shows a higher difference can be seen between developed and developing countries like India.

4.2.1 Karnataka's Health Status Compared to India

Table 4.2: Selected Health Status Indicators in Karnataka and India

Sl. No.	Items	Karnataka	India
1	Life Expectancy at Birth	65.3	63.5
2	Infant Mortality Rate	41	50
3	Under Five Mortality Rate	54.7	74.3
4	Percentage of persons not expected to survive beyond the Age of 40 years	14.6	17.7
5	Percentage of Women Adult Population with BMI <18.5	35.5	33
6	Percentage of Men Adult Population with BMI <18.5	33.9	34.2
7	Percentage of Women with Anaemia	51.5	55.3
8	Percentage of Children (0-5 years) with Anaemia	70.4	69.5
9	Death Rate	7.2	7.3
10	Public Expenditure on Health as a percentage to GSDP	0.87	2.02
11	Per capita Public Expenditure on Health	233	1014
12	Per capita Private Expenditure on Health	597	1639
13	Public Expenditure on Health as a percentage to total Health Expenditure	71.9	58.3
14	Private Expenditure on Health as a percentage to total Health Expenditure	28.1	41.7

All the selected indicators in the above tables reveal that Karnataka's performance is better than the average of all India. Life expectancy at birth in Karnataka is 65.3 years, which is comparatively very less than the states like Kerala. In Karnataka 41 infants die before 3 weeks in every 1000 lives birth. Further, 55 children per 1000 live birth die before the age of 5 years. It is held that this child/infant death is due to unhealthy pregnancy, underage pregnancy, lack of institutional delivery, ignorance and so on. More than one third people are below 18 BMI(Body Mass Index). Female <18 BMI is 35.5 per cent and <18 BMI is 33.9; this that the female male are more undernourished than the male.

Having given woman an idol status in the country, it is discouraging to note that more than 55 per cent of the female have the anemia which shows the wretchedness of women in the country. In Karnataka also the condition is equally bad with 51 percent of female population being anemic. This female anemia affects the children when they give birth and nourish. Hence the percentage of anemic children (0-5 years) is 70.4 per cent. The above figures clearly show the pathetic condition of the health status in Indiawhat an irony that we are talking about IT, BT, double digit growth rate, Swabhimani India, India shining and so on.

Table 4.3: Selected Health Infrastructure Facilities in Karnataka and India

		(per 10 lakh Population)	
Sl. No.	Items	Karnataka	India
1	Primary Health Centres (PHCs)	38	21
2	Sub Centres	140	129
3	Community Health Centres (CHCs)	6	4
4	Rural Hospitals	8	6
5	Urban Hospitals	8	3
6	Total Hospitals	16	10
7	Total Beds	1096	476
8	No. of Doctors at PHCs	48	21
9	No. of Health Assistants at PHCs	34	31
10	No. of Health Workers at PHCs	203	188

Source: India Human Development Report 2011

In the above table it can be observed that Karnataka is better off with respect to all the health infrastructure facilities. It is not an exaggeration to consider the state as the best performer because of the following facts. In

Karnataka there are only 38 Public Health Centres [PHCs] 10 per lakh population, 140 sub centres and 6 community health centres per 10 lakh population. These facilities are very less compared with the present health status and the existing population. The gap of rural and urban hospital is high; there are only 6 hospitals per 10 lakh rural population and 21 hospitals for urban population. In case of bed per 10 lakh population it is observed that there are 1096 bed per 10 lakh population, which is very less. Doctors per 10 lakh population in PHCs are only 48 and there are 34 assistants and 203 health workers for the same amount of population in the state.

4.3 Health Care Services

Institutional Structure for the Delivery of Health Care Services

The delivery of health care services is being carried out in the state by public, private (for profit and non profit) parastatals, and corporate agencies. However, the role and magnitude of these agencies differs with regard to the kind of health services offered by them. As is evident in the Indian context, the major player seems to be the private sector, which plays a significant role in the delivery of health services. In the following discussion at attempt is made to present the institutional structure that exists in the public domain for the delivery of health services.

At the outset the public health care institutional infrastructure would give us a broad overview of the role played by the public sector in the provision of health services. The following table would depict the health care institutions right from the sub center level to the referral hospitals that come under the jurisdiction of public administration.

Table 4.4 Health Infrastructure and Human Resources in Karnataka

Sl.No	Particulars	Required	In position	shortfall
1	Sub-centre	7369	8143	-
2	Primary Health Centre	1211	2195	-
3	Community Health Centre	302	323	-
4	Multipurpose worker (Female)/ANM at Sub Centers & PHCs	10338	8028	2310
5	Health Worker (Male) MPW(M) at Sub Centers	8143	3762	4381
6	Health Assistant (Female)/LHV at PHCs	2195	1170	1025
7	Health Assistant (Male) at PHCs	2195	837	1358
8	Doctor at PHCs	2195	2814	-
9	Obstetricians & Gynecologists at CHCs	323	215	108
10	Physicians at CHCs	323	192	131
11	Pediatricians at CHCs	323	116	207
12	Total specialists at CHCs	1292	691	601
13	Radiographers	323	30	293
14	Pharmacist	2518	1983	535
15	Laboratory Technicians	2518	1242	1276
16	Nurse/Midwife	4456	1647	2809

(Source: RHS Bulletin, March 2008, M/O Health & F.W., GOI)

In the NRHM project, a total of 898 PHC have been strengthened with three Staff Nurses each to make them functional for 24x7 works; 325 CHC are functioning on 24X7 basis & facility survey completed in 143 (including other health institution below district level). A total of 13 SDH, 17 DH, 117 CHC and others below district level are functioning as FRUs. 19 districts have functional Mobile Medical Unit (MMU) an a total of 27,195 ASHAs have been selected and 11,205 are trained up to 5th Module. 11205 ASHAs have been provided with

drug kits. A total of 7028 Sub-centers are functional with an ANM. About 134 SCs are strengthened with 2nd ANM. The state has appointed 701 Contractual AYUSH Doctors. As far as manpower is concerned, 59 Specialist, 514 Doctors, 4012 SN, 1126 ANMs are recruited on contractual basis to improve the health services in the State.

Table 4.5 Public Health Care Institutions in Karnataka

No. of Hospitals	177
No. of CHCs	263
No. of PHCs	1679
No. of PHUs	581
No. of Sub-Centers	8143
No. of Urban PHCs	17
No. of Maternity Annex	304
No. of Beds	43158
No. of Govt. Medical Colleges	4
No. of Private Medical Colleges	26
Central Govt. Hospital & Dispensaries	26
ESI Hospital & Dispensaries	136
Local Body Hospital & Dispensaries	53
Rural Family Welfare Centers	269
Urban Family Welfare Centers	87
Urban Health Centers	124
Post Partum Centers	103
Medical Termination of Pregnancy (MTP) Centers	517
Health & FW Training Centers	4

Source: *Karnataka Health Profile 2004*, DoH&FW, GoK

Table No 4.6: District wise Selected Health Infrastructure Facilities in Karnataka, 2010

District	Actual in numbers			
	District and other Hospitals	Community Health Centres	PHCs and Sub Centres	Total Beds
Bagalkot	1	12	271	1108
Belgaum	1	24	686	2876
Bijapur	2	12	349	1474
Dharwad	4	3	211	1902
Gadag	3	6	209	858
Haveri	1	11	358	1131
Uttara Kannada	2	13	199	1940
Bellary	6	13	343	2696
Bidar	1	10	285	1230
Gulbarga	1	30	505	2860
Koppal	2	11	229	896
Raichur	1	9	249	1226
Bangalore Urban	12	6	258	4968
Bangalore Rural	1	3	238	613
Chikkaballapur	1	7	240	948
Chitradurga	1	15	359	1562
Davangere	3	9	394	2096
Kolar	5	6	262	1712
Ramanagar	1	7	294	799
Shimoga	2	11	396	1807
Tumkur	1	13	612	2082
Chamarajnagar	1	6	303	1040
Chikmaglur	2	10	423	1478
Dakshina Kannada	3	10	498	2009
Hassan	1	21	545	2792
Kodagu	2	8	220	1207
Mandya	2	11	483	1930
Mysore	4	17	569	3553
Udupi	2	10	365	1014
Karnataka State	69	324	10353	51807

Source: Source: Computed from the data available from Karnataka at a Glance

Table No:4.7 The other Health Institution in Karnataka

Sl.No.	Health Institution	Number
1	Medical College	36
2	District Hospitals	17
3	Referral Hospitals	57
4	City Family Welfare Centre	2
5	Rural Dispensaries	176
6	Ayurvedic Hospitals	122
7	Ayurvedic Dispensaries	589
8	Unani Hospitals	13
9	Unani Dispensaries	51
10	Homeopathic Hospitals	20
11	Homeopathic Dispensary	42

Source: Karnataka State NRHM Report

Institutional deliveries improved from 6.16 lakhs (2006-07) to 6.35 lakhs (2007-08). During the year 2008-09 the state had 6.82 lakhs Institutional deliveries. JSY beneficiaries increased from 2.33 lakhs (2006-07) to 2.83 lakhs (2007-08). The number of JSY beneficiaries is 3.31 lakh during the year 2008-09. Female sterilizations have increased from 3.50 lakh (2006-07) to 3.69 lakh (verify the figures) (2007-08) and male sterlisation has increased from 576 (2006-07) to 1804 (2007-08). During the year 2008-09, 310000 female & 2000 male (verify the figures) sterilization have been reported. 14 districts are implementing IMNCI and 6900 people have been trained so far. 266721 VHND held since the launch of NRHM. First Phase of Community Monitoring has been operationalised in the state.

4.4 NRHM Project:

Achievements

Overall improvement in health system since NRHM Achievements Made

- The availability of Medical doctors, paramedics and staff nurses has improved in the public health Services.
- Public Health system at district level is under the purview of Panchayat system.
- District Health Action Plans created in all district and meetings of DHS take place regularly.
- Web based HMIS is functional in the State.
- Trained ASHAs are available in C category districts of the State, and provided with ID cards.

To strengthen this programme there is a need to create support systems and communication material for ASHAs.

- Community monitoring actions are through VHSCs.
- Good convergence with NACP III and ICDS in VHND.
- Implementation of Suvarna Arogya Chaitnya School Health Program by the State.
- Holographic maternity card to improve the ANC and PNC programme.

Areas for Further Improvement:

- Capacity Building of Samiti members for utilization of funds need to be strengthened.
- District Hospital, FRU needs strengthening.
- New Born Care and Management of sick new born at peripheral facilities needs strengthening
- Quality Assurance needs focused attention.
- Greater guidance to and closer monitoring of untied fund utilization.
- AYUSH doctors role to be clearly defined and oriented about NRHM.

Infrastructure:

- State is pooling infrastructure resources from different sources. Need to focus on quality of construction in a few places.
- Facility Surveys undertaken and gaps identified.
- Engineering Cell of Health Department doing the construction, Quality of construction is to be improved.
- PHC Taluka Hospitals have shown improvement in physical infrastructure to deliver RCH services. New born care needs attention.

4.5 Human Resources:

- Contract appointment of Specialists, Doctors, staff nurses, ANMs and Lab Technicians has been made to meet shortfall.
- MBBS doctors trained in Emergency Obstetric care and life saving anaesthetic skills have been posted to designate FRUs. Signs of

improvement in availability of HR. Coverage to be widened for EMOC and LSAS trained MOs.

- ANM training centres to be strengthened.
- Need to review cadre management and service condition of doctors.
- Additional financial incentives to doctors and staff nurses. Priority to C category and tribal districts is commendable.

Service Delivery:

- Web based system introduced in district. HMIS needs to be harmonized with NRHM needs.
- Large scale involvement of NGOs. PHCs outsourced to NGOs.
- OPD, Institutional deliveries are increasing in Sub-centers & PHCs. There are fixed monthly outreach plans at Sub-Centres. Significant initiatives by the State to increase postnatal care, investigation of maternal deaths and for spacing methods

Table No: 4.8 District wise Selected Health Infrastructure Facilities in Karnataka, 2010

District	Per lakh Population				Per Thousand Sq.Kms			
	District and other Hospitals	Community Health Centres	PHCs and Sub Centres	Total Beds	District and other Hospitals	Community Health Centres	PHCs and Sub Centres	Total Beds
Bagalkot	0.05	0.63	14.33	58.60	0.2	1.8	41.1	168.0
Belgaum	0.02	0.50	14.36	60.19	0.1	1.8	51.1	214.4
Bijapur	0.09	0.55	16.05	67.77	0.2	1.1	33.3	140.7
Dharwad	0.22	0.16	11.42	102.98	0.9	0.7	49.9	449.6
Gadag	0.28	0.56	19.62	80.55	0.6	1.3	44.9	184.2
Haveri	0.06	0.70	22.65	71.56	0.2	2.3	73.8	233.1
Uttara Kannada	0.14	0.90	13.85	135.02	0.2	1.3	19.3	188.5
Bellary	0.24	0.51	13.54	106.46	0.7	1.5	40.7	320.2
Bidar	0.06	0.59	16.76	72.35	0.2	1.8	52.3	225.8
Gulbarga	0.03	0.80	13.51	76.51	0.1	1.8	31.1	176.3
Koppal	0.14	0.79	16.46	64.40	0.2	1.3	27.1	105.9
Raichur	0.05	0.47	12.94	63.70	0.2	1.6	44.8	220.5
Bangalore Urban	0.13	0.06	2.69	51.81	5.5	2.7	117.8	2268.5
Bangalore Rural	0.10	0.30	24.11	62.09	1.1	3.2	254.3	654.9
Chikkabasllapura	0.08	0.56	19.13	75.58	0.8	5.3	181.3	716.0
Chitradurga	0.06	0.90	21.62	94.07	0.1	1.8	42.8	186.2
Davangere	0.15	0.46	20.24	107.66	0.5	1.5	65.5	348.3
Kolar	0.32	0.39	17.01	111.15	0.6	0.7	31.9	208.2
Ramanagar	0.09	0.65	27.15	73.79	0.3	2.0	82.7	224.8
Shimoga	0.11	0.63	22.56	102.93	0.2	1.3	46.8	213.5
Tumkur	0.04	0.48	22.82	77.64	0.1	1.2	57.7	196.5

Table contd...

District	Per lakh Population				Per Thousand Sq.Kms			
	District and other Hospitals	Community Health Centres	PHCs and Sub Centres	Total Beds	District and other Hospitals	Community Health Centres	PHCs and Sub Centres	Total Beds
Dakshina Kannada	0.14	0.48	23.90	96.42	0.6	2.1	102.8	414.8
Hassan	0.06	1.18	30.68	157.19	0.1	3.1	80.0	409.7
Kodagu	0.36	1.44	39.66	217.57	0.5	2.0	53.6	294.2
Mandya	0.11	0.61	26.70	106.71	0.4	2.2	97.4	389.0
Mysore	0.13	0.57	19.00	118.64	0.6	2.7	90.8	566.8
Udupi	0.17	0.85	30.99	86.08	0.6	2.8	101.4	281.8
Karnataka State	0.11	0.53	16.94	84.75	0.4	1.7	54.0	270.1

Source: Computed from the data available from Karnataka at a Glance

Health Infrastructure Facilities per Ten Lakh Population:

- Among the districts wich have higher number of district hospitals, except Kodagu and Kolar, Gadag, Bellary, Dharwad are from north Karnataka. Among the districts which have lesser number if district hospitals, Belgaum, Gulbarga, Raichur and Balgalkot are from North Karnataka.

- Except Uttar Kannada, the five district in top order in Community Health Centre (CHC), namely Kodagu, Hassan, Chitradurga and Chickmangalur, are from South Karnataka. Expect Dharwad which is North Karnataka, the other district in lower order in CHCs, there are four districts, namely, Bangalore rural, Bangalore uraban Davngere and Kadagu- all from South Karnataka.

- Top 5 districts viz. Kodagu, Hassan, Chitradurga, Udupi and Chamarajanagar are from south Karnataka, which have higher number of PHCs. Except Bangalore urban remaining 4 districts from North

Karnataka namely Dharwad, Raichur, Gulbarga and Bellary are the districts which have lower number of PHCs.

- Among the top 5 districts which have higher number of beds, except Uttar Kannada, Kodagu, Davangere, Chikkaballapur and Mysore are from south Karnataka. Among the lower order 5 districts, along with Bangalore rural and Bangalore urban are from south region, and remaining three districts namely Bagalkot, Belgaum and Raichur are from north Karnataka region.

Health Infrastructure Facilities per thousand Sq. Km. Area,

- There are more number of district hospitals in Dharwad and Bellary in north Karnataka, Davangere, Bangalore rural, Bangalore urban in south region. Among the 5 lower order districts, except Belgaum, Gulbarga, remaining there districts viz. Tumkur, Chitradurga and Hassan are from south Karnataka.

- In case of CHCs all 5 higher order districts viz. Chikkaballapur, Bangalore rural, Bangalore urban, Hassan and Udupi are from south Karnataka only. Among lower order 5 districts, except Bijapur and Dharwad remaining districts (Kolar, Chamarajanagar and Tumkur) are from south Karnataka.

- More number of PHCs are in Bangalore rural, Bangalore urban, Chikkaballapur, Dakshina Kannada and Udupi, these all are from south Karnataka. Among the lower order districts except Kolar remaining districts viz. Bijapur, Koppal, Gulbarga and Uttar Kannada are from south Karnataka.

- Higher number of beds (among top 5 districts) are found in 4 districts of south Karnataka (Bangalore urban, Bangalore rural, Chikkaballapur and Mysore) only one district (Dharwad) in north Karnataka; except Chamarajanagar of south Karnataka, remaining districts namely Bagalkot, Bijapur, Gulbarga and Koppal are from north Karnataka.

4.6 Organization of Health and Family Welfare Department:

The state is following the National pattern of three-tier health infrastructure in rendering primary health care through Primary Health Centers (PHCs), Sub-Centers, and Community Health Center's to its people by way of implementing various National and State Health Programmes of public health importance through its network of various types of health and medical institutions. In the State, the Department of Health and Family Welfare plays a vital role in providing health care services. Following are the major initiatives in this regard.

- Rural Health Component of Minimum Needs Program,
- National Malaria Eradication Program
- National Filarial Control Program,
- National Program for Blindness Control,
- Prevention and Control of the communicable diseases like Diarrhea, Kyasanur Forest Diseases, Japanese Encephalitis etc.,
- School Health Program,
- Nutrition Program,
- Nutrition Education and Demonstration,
- Laboratory Services and Vaccine Production Units,
- Education and Environmental Sanitation,
- Health Education and Training Program
- Curative Services.

4.7 Indicators of Health Status in Karnataka:

A bird's eye view of where the state of Karnataka stands today as far as health status components (some of which, are also considered as indicators of **human development)** with the country as a whole would give us the performance of the state vis-à-vis other states. A look at three indicators should give us an idea of how far Karnataka has gone in providing basic health facilities to its people. These are the infant mortality rate, the maternal mortality rate and life expectancy at birth.

The **infant mortality rate** indicates the number of babies out of a thousand born alive who die within the first year of their birth. It is a pointer not only to the health status of the population but also to the social and cultural factors that have an effect on health. Throughout the country the IMR has declined in the eighties and nineties. In Karnataka about 50 out of 1000 infants born die every year (NFHS-2 shows IMR as 51.5 while SRS, 1998 as 58). This is more than the number in Kerala, Gujarat, Maharashtra, Punjab, Tamilnadu and the West Bengal. Decline in the infant mortality rate between 1988 - 90 and 1993-95 was also higher in Andhra Pradesh, the West Bengal and Tamilnadu than in Karnataka.

The **maternal mortality rate** is the statistics of the number of women who die of causes linked to pregnancy and childbirth. Data are not readily available for making comparisons among states. The computation of the ratio also suffers from serious deficiencies. Anemia, hemorrhage, eclampsia, obstructed labour, infection and abortion account for 80 percent of the maternal deaths in India. A 1993 survey of the Registrar General of Births and Deaths indicates that hemorrhage alone may account for 23 percent of these deaths. UNICEF had made a comparison of maternal health statistics throughout the country and pointed out that 450 out of 100000 women die of causes connected to pregnancy and childbirth in Karnataka. (See Figure) This is higher than the average for the fifteen major states; it is also worse than the figures for Andhra

Pradesh, Gujarat, Haryana, Maharashtra, the Punjab, Tamilnadu and the West Bengal. A recent estimate of MMR for Karnataka by SRS (1988) shows that the indicator had a value of 195.

Finally, we may place Karnataka on the all India scale in respect of the **life expectancy at birth** of its citizens. The International Conference on Population Development (ICPD) had resolved in 1994 to target a life expectancy of 70 by 2005 and f 75 by 2015. Against this, Karnataka has achieved a life expectancy at birth of 62 which is slightly higher than the national level of 60. Kerala, Maharashtra, Haryana, Tamil Nadu and the Punjab are among the Indian states that are ahead of Karnataka in this respect.

Table No4.9: Life expectancy at birth in major states

State	1983	1993
Andhra Pradesh	58.4	61.8
Assam	51.9	55.7
Bihar	52.8	59.3
Gujarat	57.6	61
Hayana	60.3	63.4
Karnataka	60.6	62.5
Kerala	68.4	72.9
Madhya Pradesh	51.6	54.7
Maharashtra	60.6	64.8
Orissa	53	56.5
Punjab	63.1	67.2
Rajasthan	53.5	59.1
Tamil Nadu	56.9	63.3
Uttar Pradesh	50	56.8
West Bengal	57.4	62.1
INDIA	**55.4**	**60.3**

Source: *Directorate of Health Services,* Bangalore

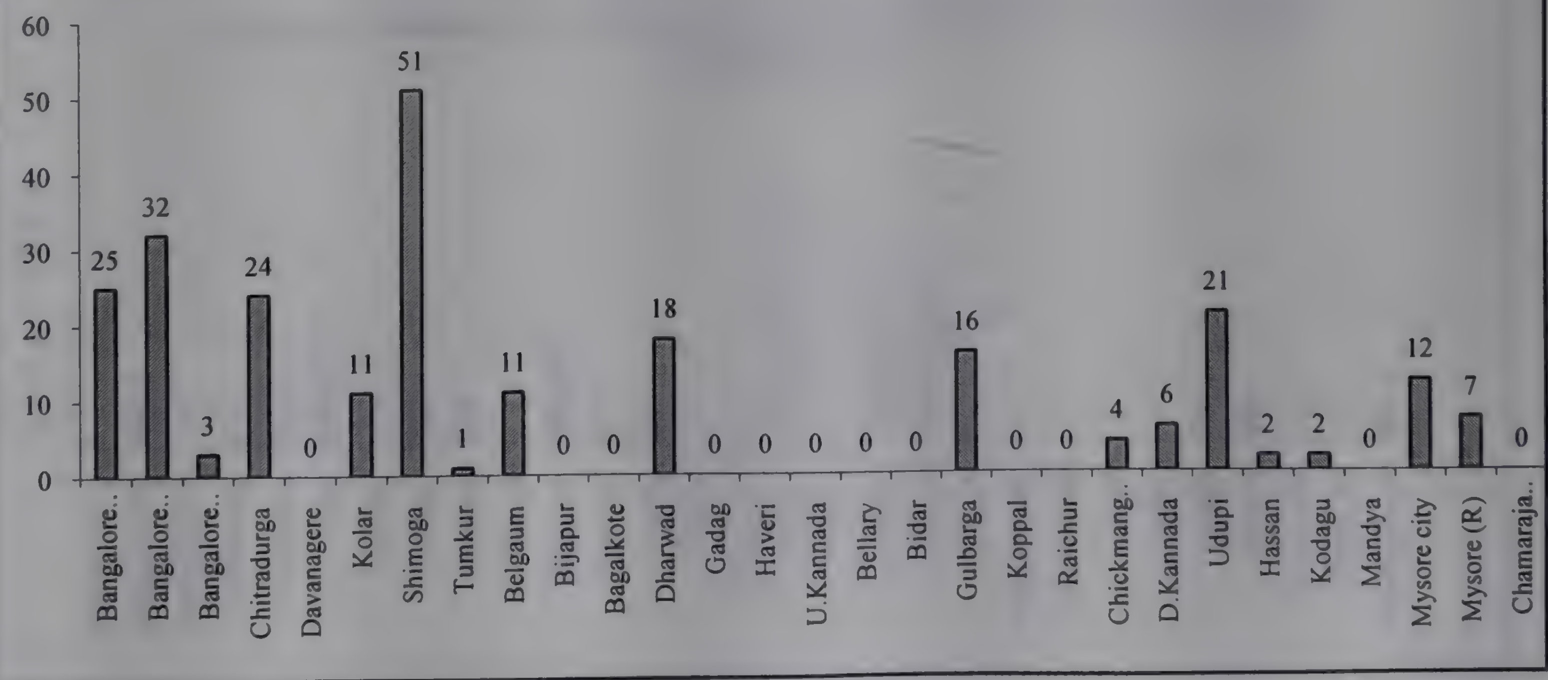
The changing demographic and epidemiological scenario in the state has posed many challenges for the health sector. For example the challenge of HIV with the combination of TB in the state needs immediate attention. The recurrences of malaria in the state prove that there is need to control and eradicate communicable diseases, especially high incidence of diseases like tuberculosis, malaria and filariasis.

If we look at the burden of diseases in the state in terms of number of cases and deaths for which the data is available, the following picture emerges.

1. Cholera:

There were 246 cases of cholera in the state with one death on account of the disease. Shimoga, Chitradurga and Bangalore Urban districts had the highest number of cholera cases. Dharwad and Gulbarga in the northern part of the state also experienced the bouts of cholera to some extent. The following Table-4 shows the number of attacks and deaths on account of cholera in the state.

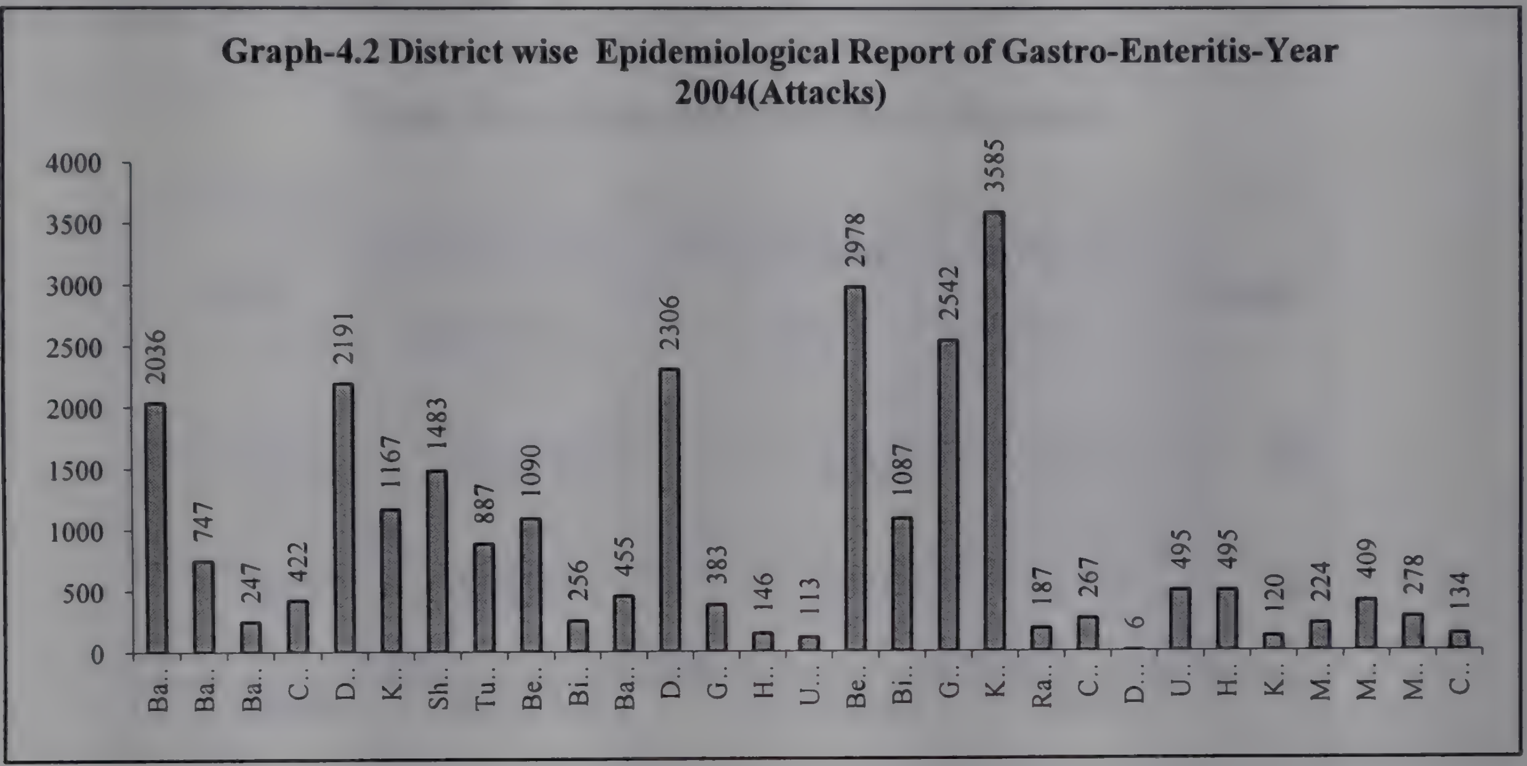
Graph-4.1 : District wise Epidemilogical Report of Cholera (Attacks) 2004



Source: *Directorate of Health Services,* Bangalore

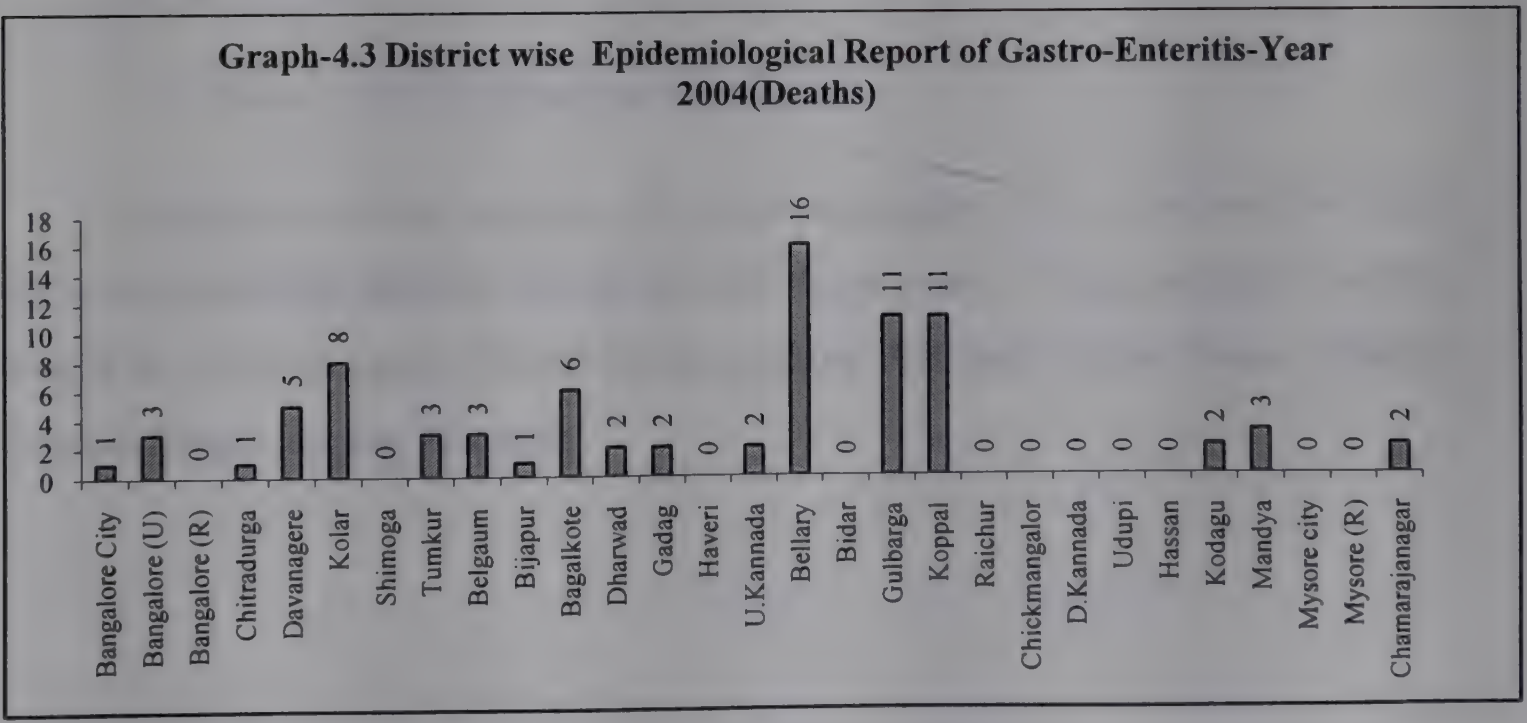
2. Gastro Enteritis:

Gastro enteritis seems to be the major cause of worry in the state. The district wise number of cases and deaths on account of it in the state reveals that for the state as a whole there were 26,736 GE cases, of which 82 resulted in deaths. There was considerable variation across the districts, which is depicted, in the following graph.



Graph-4.2 District wise Epidemiological Report of Gastro-Enteritis-Year 2004(Attacks)

Source: Directorate of Health Services, Bangalore



Graph-4.3 District wise Epidemiological Report of Gastro-Enteritis-Year 2004(Deaths)

Source: Directorate of Health Services, Bangalore

3. Malaria:

The State has 30 districts with a population of 52.85 Million. There are 254 CHCs, 1679 PHCs, 8143 Sub-centers and 29406 villages. There are 7244 Multipurpose Worker (Female)/ANM, 3762 Health Worker (Male), 1170 Health Assistants (Female)/LHV, 837 Health Assistant (Male) and 1242 Laboratory Technician. In addition, the state has 1044 functioning Fever Treatment Depots (FTDs) 1203 Malaria Clinics.

Table No:4.10 Epidemiological Situation

Year	Total Slide examined	Total Malaria Cases	Total Pf Cases	Deaths
2006	9924797	62842	16459	32
2007	8867947	49355	11295	18
2008	8878353	47162	9957	7
2009 (uptoMar.)	2097694	5638	991	0

Source: *NRHM Karnataka state Report*

Incidence of total malaria, Pf cases and deaths due to malaria has been showing consistent decline during the last three years. 7 high endemic districts would be covered under World Bank Assisted National Vector Borne Disease Control Project during Phase-II.

4. Filarial:

Filarial seems to be prevalent in the selected pockets of the state. Districts of Bidar and Gulbarga have the highest prevalence of the disease. However, over the period of time there seems to be marginal decline in the number of cases in the state as a whole. The following table presents the occurrence of the disease for the period from 2001 to 2005.

Table No 4.11: Filaria Incidence in Karnataka from 2001 -2005

District	2001	2005
	Persons with disease manifestation	Persons with disease manifestation
Bidar	1244	330
Bagalkot	496	501
D. Kannada	140	809
Gulbarga	4022	2789
Raichur	60	27
U. Kannada	380	90
Udupi	54	585
Total	**6396**	**5131**

Source: *Directorate of Health Services,* Bangalore

- **Elimination of Lymphatic Filariasis**

The goal of Elimination of Lymphatic Filariasis in the country is set to be achieved by 2015. In pursuance to achieve this, Government of India during 2004 initiated Mass Drug Administration (MDA) with annual single dose of DEC tablets to all the population living at the risk of filariasis excluding pregnant women, children below 2 years of age and seriously ill persons. The population coverage of MDA in the state was 85.22% in 2004, 83.31% in 2005, 90.20% in 2006, 89.67% in 2007 and 90.53% in 2008.

Line listing of Lymphoedema and Hydrocele cases was also initiated in 2004 for morbidity management and as per updated report (2007), there are 15326 Lymphoedema and 2600 Hydrocele cases.

5. Tuberculosis:

Table No 4.12: Infrastructure:

Total Population	580 lakh
No. of Districts/reporting Units	30
No. of Tuberculosis Units (TUs)	124
No. of Designated Microscopy Centers (DMCs)	638

T.B. is another disease of concern in the state. Rapid urbanization could be the major cause for the fast spread of the disease. It is found in almost all the districts of the state though there is variation across the districts. The following Table depicts the number of T.B. cases across districts of Karnataka state.

Table No 4.13: District wise T.B cases

District	Suspects examined per lakh population	Annualised total case detection rate (against >144/ lakh)	Annualised new sputum positive case detection rate (against >53/lakh		Sputum conversion rate in new smear positive cases (against >90%)	Cure rate in new smear positive cases (against >85%)
				(In %)	(In %)	(In %)
Bagalkot	168	115	47	63	84	74
Bangalore City	246	134	41	55	89	74
Bangalore Rural	221	107	48	63	85	77
Bangalore	132	149	47	63	90	81
Belgaum	154	116	43	58	91	83
Bellary	176	123	48	64	92	75
Bidar	147	105	38	50	90	75
Bijapur	128	110	26	35	81	71
Chamarajanagar	177	142	53	71	88	74
Chikmagalur	178	127	51	68	90	84
Chikkaballapur	208	90	34	46	86	85
Chitradurga	154	140	64	85	89	82
Dakshina Kannada	174	89	34	45	86	77
Davanagere	185	111	46	62	90	77
Dharwad	161	108	37	49	88	78
Gadag	159	97	45	60	89	84
Gulbarga	120	111	35	46	75	66
Hassan	194	97	43	58	90	83
Haveri	139	84	34	46	80	78
Kodagu	191	67	34	45	83	80
Kolar	202	96	43	58	85	75
Koppal	169	122	60	80	83	88
Mandya	278	107	47	63	91	79
Mysore	262	130	49	66	90	78
Raichur	164	158	66	88	87	80
Ramanagara	157	106	44	59	81	62
Shimoga	175	97	40	54	90	80
Tumkur	197	113	50	67	84	78
Udupi	202	82	35	46	82	86
Uttara Kannada	196	83	28	37	82	79
Total	181	114	44	58	87	78

Source: *NRHM Karnataka state report*

- **State level performance (Based on quarterly reports for 1st quarter of 2009)**
  - Overall performance of the State is not good.
  - Overall 181 TB suspects/lakh pop are examined in 1st quarter 2009 which is good except few districts.
  - Inspite of good referral, case finding is low. TCD rate of 114/lakh and NSP case detection rate of 4/lakh (58%) are both low.
  - Sputum conversion rate of 87% is lightly low but cure rate of 78% in new smear positive patients is very low and also shows downward trend.

- **District-wise Performance (Based on quarterly reports for 1st quarter of 2009)**
  - TCD rate of <102/lakh (50%) in 10 (33%) of 30 districts is very low.
  - Similarly NSP case detection rate of 38/lakh (50%) in 9 (30%) of 30 districts is very low.0% Sputum conversion rate is very low (<85%) in 10 districts and cure rate is very low (<80%) in 19 districts.

6. Gastro Enteritis

Table No: 4.14 GE cases deaths due to GE Cases

Year	Cases	Deaths
2006	73	3
2007	32	1
2008	3	0
2009 (Prov.upto March)	10	0

Source: *NRHM Karnataka state report*

G.E. cases have been reported repeatedly from Bellary, Raichur, Kolar, Koppal, Bangalaore (Rural) and Chitradurga districts. GE incidence since 2006 is given below. During 2006 Bellary was covered under GE vaccination. Kolar and

Raichur were covered during 2007 and Koppal and Mandhya were covered during 2008.

7. DENGUE

Table No 4.15 Dengue cases deaths due to Dengue

Year	Cases	Deaths
2006	109	7
2007	230	0
2008	339	3
2009 (Upto. 27thMay)	71	1

Source: *NRHM Karnataka state report*

Total of 230 Dengue cases and no death was reported during the year 2007 and in the year 2008,total of 339 dengue cases and 3 deaths were reported whereas in 2009 till 27th May, 71 cases and 1death has been reported.

8. CHIKUNGUNYA

Table No 4.16 CHIKUNGUNYA Cases

Year	Cases
2007	1705
2008	46510
2009 (Upto. 27thMay)	3784

Source: *NRHM Karnataka state report*

Earlier in 2007, 27 districts of the state reported 1705 suspected Chikungunya cases and in 2008, the state reported 46510 cases. In 2009 till 27th May, 3784 suspected Chikungunya cases have been reported. Out of 1112 samples tested, 404 were confirmed for Chikungunya. For proactive surveillance 7 Sentinel Surveillance Hospitals/ laboratory have been identified in the state and linked with National Institute of Mental Health & Neuro Sciences, Bangalore – the Apex Referral Laboratory. NIV Pune has been entrusted the supply of IgM ELISA test to the identified institutes.

4.8 Child Health and Immunization

- State has shortage of personnel to provide care services to the newborn; moreover pace of child health training is slow.
- Neonatal mortality rate (NMR – infant deaths within 4 weeks of life per 1000 live births) at 26 (SRS 2007) accounts for 55% of the IMR, while early NMR (infant deaths within one week of life per 1000 live births) at 20 (SRS 2007) accounts for 77% of the NMR. 48 hours stay at the facility after delivery does not always take place; this is clearly a missed opportunity to address early neonatal mortality.
- State doesn't have nutritional rehabilitation centres in place, to treat severe acute malnutrition.

Table No 4.17 child health programmes indicators in Karnataka state

Survey	NFHS 1	NFHS 2	NFHS 3	CES	CES	DLHS 2	DLHS3
Indicator	(1992-93)	(1998-99)	(2005-06)	2005	2006	(2002-04)	(2007-08)
Full Immunization	52.2	60	55	86.9	84	71.3	76.7
BCG	81.7	84.8	87.8	94.3	96.9	92.4	96.9
Measles	54.9	67.3	72	88.8	89.8	77.2	85.2
DPT3	70.7	75.2	74	89.4	87.4	83.3	84.8

As per the evaluated survey the full immunization is 76.8 % as per DLHS-3 (2007-08). The coverage of BCG at 96.9% and Measles at 85.2 % is impressive. Karnataka is one of the states who have completed the Immunization training of Health workers. The District level AEFI committees have been constituted in all the districts.

4.9 Maternal Health

Table No 4.18 Selected RCH outcome indicators in Karnataka and India

Sl.No.	RCH OUTCOME INDICATOR	KARNATAKA		INDIA	
		DLHS–2 (2002–04)	DLHS–3 (2007–08)	DLHS–2 (2002–04)	DLHS–3 (2007–08)
1	Mothers who received 3 or more antenatal care checkups (%)	78.6	81.6	50.4	51
2	Mothers who had full antenatal check-up (%)	29.6	37.7	16.5	19.1
3	Institutional deliveries (%)	57.9	65.1	40.9	47
4	Children 12-23 months age fully immunised (%)	71.3	76.7	45.9	54.1
5	Children age 6-35 months exclusively breastfed for at least 6 months (%)	34.1	38.3	22.7	24.9
6	Children with diarrhoea in the last 2 weeks who received ORS (%)	32.7	45.5	30.3	33.7
7	Use of any modern contraceptive method (%)	57.7	60.8	45.2	47.3
8	Total unmet need for family planning - both spacing methods and terminal methods (%)	15.1	15.8	21.4	21.5

- State is yet to initiate training of medical officers in management of common obstetric complications.

- Pace of facility operationalisation is slow; only 58% of FRUs and 54% of PHCs have been operationalised so far. During a recent review meeting, the state indicated a total of 171 anesthetists available in the public health system. These should be urgently rationalised to increase the number of functional FRUs.

- State needs to identify high load facilities to increase SBA training sites, since only 28% of the training target has been achieved.

- The state also presented during the recent JRM- IV meeting that it had trained 207 MOs in safe abortion services. The service is provided only at the FRUs and not at the 24x7 PHCs.State must ensure that this service should also be provided at the PHCs.

- Full range of services is not being provided during VHNDs; further, state needs to ensure that at least planned VHNDs are held as per schedule

Table No 4.19 District wise Information on Karnataka under some RCH indicators

Districts	Mother received at least one TT injection	Institutional Deliveries	Full Vaccination	Contraceptive Use
India	**73.5**	**47**	**69.6**	**54.1**
Karnataka	**86.9**	**65.1**	**85.2**	**61.8**
Bagalkot	82.3	46.6	72.1	46.7
Bangalore Rural	97.6	85	91.8	66.1
Bangalore Urban	98.1	93.9	97.1	57.1
Belgaum	80.5	75.7	90	58.3
Bellary	64.7	45.4	82.3	50.5
Bidar	86.9	65.1	84.9	50.1
Bijapur	73.8	59.8	62.3	50.4
Chamarajnagar	96.1	76.2	93.3	60.9
Chikmagalur	97.8	84	98	67.8
Chitradurga	84.9	63.6	84.7	59.4
Dakshina Kannada	97.9	96	94.9	46.3
Davanagere	89.9	64.8	88.4	60.5
Dharwad	90.5	66.4	90.2	56.9
Gadag	88.9	49.9	88.8	50.2
Gulbarga	74.6	47.6	75	42.4
Hassan	94.5	80.3	88.7	73.4
Haveri	94.5	64	85.8	56.3
Kodagu	96.5	81.7	96.8	62
Kolar	95.8	62.3	94.3	63.1
Koppal	73.7	24.8	80.8	47.5
Mandya	97.9	86.9	96.4	72.6
Mysore	96.6	79.6	93.7	64.8
Raichur	61.3	41.7	69.5	45.5
Shimoga	96.5	71.2	90.8	64.9
Tumkur	94.6	73.1	95.5	63.5
Udupi	96.7	94.3	96	54.2
Uttara Kannada	94.3	82.7	97	60.1

source DLHS-III

Karnataka's progress during the four year period between DLHS 2 (2002-04) to DLHS 3 (2007-08) could have been better

- Mothers having full ANCs increased from 29.6% to 37.7%.
- Institutional deliveries increased from 57.9% to 65.1%.
- Full immunisation in children 12-23 months increased from 71.3% to 76.7%.
- Children with diarrhoea receiving ORS has increased from 32.7% to 45.5%.
- Unmet need for family planning remained static (from 15.1% to 15.8%). Further, use of modern contraceptives has marginally increased from 57.7% to 60.8%.

4.10 Health Care Activities in Karnataka:

Public sector in Karnataka has initiated a number of schemes for the benefit of the community. NGOs and Corporate bodies are also active in this regard and have many activities, which are focused as regard their intervention. Some of the major initiatives of the public health department are as indicated below.

- ***Integrated Child Development Services (ICDS) Scheme***

This programme has been implemented in the State since 1975-76 with the co-ordination of the Department of Health and Family Welfare and the Department of Social Welfare. The beneficiaries of the programme are children up to 6 years of age, pregnant women and nursing mothers.

The services are extended through the peripheral Health Institutions and Anganwadi Centers of the Social Welfare Department. The package of Services envisaged comprises:

- Supplementary Nutrition
- Immunization
- Health Checkup
- Referral Services
- Health and Nutrition Education and
- Non-formal Education of Children through Anganwadis.

So far 108 ICDS projects have been sanctioned, of which 94 are in functional stage and 14 in preparatory phase. Out of these 108 projects 4 are tribal, 6 are urban and 98 are rural projects.

4.11 Mental Health Programme:

Mental Health Programme is being implemented in Bellary District since 1985. The implementation of this programme is likely to be extended to all the districts in a phased manner. The activities of the Mental Health Programme are:

- Training the Medical Officers and Para Medical Staff in Mental Health Programme.
- Identifying the mentally ill persons and assessing their nature of illness.
- Treating the patients with advice and required drugs

For effective implementation of the programme, the doctors as well as Para Medical Staff at the grass-root level i.e., at PHC and PHU's level have been given training in Mental Health Program. The training is being given at NIMHANS, Bangalore and Mental hospital, Dharwad. As on to-day about 308 doctors have been trained in this programme besides giving training to the Para Medical Staff of the PHCs and PHUs. Further, the drugs which are required for

treating the mentally ill patients are being supplied and in case of some districts additional budget for drugs has also been provided.

4.12 Medical development programme:

The District Hospitals are taking part not only in the curative aspect of diseases but also in the preventive and promotive aspects. Medical relief is rendered through various types of Institutions viz., District Hospitals, Major Hospitals and Epidemic Disease Hospitals.

Thirteen district hospitals, located at District Head quarters, come under non-teaching cadre. There are seven major hospitals, seven specialized hospitals and three epidemic diseases hospitals that also come under non-teaching cadre. Of the thirteen district hospitals except those hospitals in Dharwad, Karwar and Raichur all the other district hospitals have got a minimum of 250 beds. Each district hospital has almost got all the required specialties like Medicine, Surgery, Pediatric, Obstetric and Gynecology, Orthopedic, Ophthalmology, Ear, Nose and Throat, Skin and STD, Pathology and Bacteriology, Radiology, Anesthesia and Dental.

The Specialist Departments in the District Hospitals are catering to the needs of the patients coming directly as well as those referred from smaller peripheral rural centers and mofussil hospitals. The district hospitals serve as referral hospitals to the peripheral institutions.

- Burns and Casualty Wards have been established in the SC Hospital, Hassan, Mc.Gann Hospital, Shimoga, SNR Hospital, Kolar and District Hospital, Bijapur.

- STD (Sexually Transmitted Diseases) clinics are functioning in all the district hospitals and also in the General Hospitals of Udipi, KGF and Kollegal.

- Psychiatric clinics are functioning in the district hospitals at Shimoga, Hassan and Bidar and also in K C General Hospital, Bangalore.

- Physiotherapy Units are functioning in the district hospitals at Shimoga, Hassan, Tumkur, Chitradurga, Kolar, Mandya and Bijapur. Physiotherapy Unit is also functioning in K C General Hospital, Bangalore. All the teaching hospitals have got Physiotherapy Units.

- The Emergency and Casualty Departments work round the clock.

- Blood Bank services are being provided in all the district hospitals and all major hospitals of the State subject to the availability of funds.

- Radiology Services are existing in all the district and major hospitals

- Dental Clinics are established in all the district and major hospitals

- Epidemic Diseases Hospitals, which are functioning at Bangalore, Mysore and K G F, are special type of Institutions. These hospitals are meant for epidemic diseases like Cholera, Gastroenteritis, Diphtheria, Tetanus, Whooping Cough, Rabies, Measles, Chicken pox and other infectious diseases.

4.13 Hospital Pharmacy:

Another important structural unit of the health sector is Hospital Pharmacies, which are functioning in many of the major hospitals. It not only manufactures the life saving I.V. fluids such as Dextrose Saline and normal Saline required for use in hospitals but also organizes a technically sound dispensing section, quality control system, central sterile supply division and store practice in the hospital. It is also developing a Drug Information Service for the benefit of the hospital staff and the patients/patients attendant.

As on 1991, there are about 17 Hospital Pharmacy Units in the State, of which 7 are under Plan and 10 under Non-Plan. Out of these 10 Units under Non-Plan, 9 Units are under the control of the Director of Medical Education and one Unit under the control of the Director of Health and Family Welfare Services, Bangalore.

4.14 Department of Indian Systems of Medicine and Homeopathy

The Department of Indian Systems of Medicine and Homeopathy is headed by the Director of Indian Systems of Medicine and Homeopathy and is being assisted by a Deputy Director, an Administrative Officer and an Accounts Officer. There is another post of Deputy Director, Unani System that will also assist the Director of Indian Systems of Medicine and Homeopathy at the State Head Quarter. A Divisional Office is functioning at Gulberga.

At the District level, the District Health and Family Welfare officers of the Department of Health and Family Welfare Services continued to be the Administrative Controller for the Dispensaries of Indian Systems of Medicine and Homeopathy in the respective districts except districts of Gulberga Division.

There are 6 colleges (Ayurveda -3 Unani - 1, Homeopathy - 1 and Nature Cure - 1), 23 hospitals and 407 dispensaries functioning in the State under Indian Systems of Medicine and Homeopathy as **on 1991.**

There are 12 Ayurvedic hospitals in the State, out of which 7 are at district level (of which 3 serve as teaching hospitals) and the remaining 5 hospitals render services in rural areas. There are 360 Ayurvedic dispensaries functioning in the State.

There are 4 Unani hospitals and 32 Unani dispensaries in the State. The Unani wing attached to Sri Jayachamarajendra Institute of Indian Medicine, Bangalore serves as a teaching hospital for Government Unani Medical College, Bangalore. The Government College of Indian Medicine, Mysore and other two Mini Hospitals at Ramanagaram, Bangalore District and Raichur are providing facilities to the inpatients. There are 32 dispensaries in the State under Unani System of Medicine.

There are two homeopathic hospitals, one at Bangalore and the other at Somwarpet, Kodagu District and 10 homeopathic dispensaries functioning in the State to provide treatment under homeopathic System of Medicine. There is also one Nature Cure Hospital and five Nature Cure Dispensaries functioning in the state. Yoga wings have been established to provide treatment in Yoga Therapy in the hospitals at Bangalore, Mysore and Bellary. A Siddha wing and Nurses training courses are being provided at Sri Jayachamarajendra Institute of Indian Systems of Medicine, Bangalore.

4.15 Department of Drugs Control:

Another important structural unit of health sector is the Department of Drugs Control. The main function of this department is to protect and take care

of consumers' heath. This is done by exercising strict control and vigilance on the drugs which are being manufactured and marketed for sale in the state so that drugs of standard quality are made available at control prices. The Drugs Control Department of the State discharges the statutory functions involved in the enforcement of the following drugs and allied legislation.

- The Drugs and Cosmetics Act, 1940 and Rules there under
- The Drugs (price control) order, 1987
- The Drugs and Magic Remedies (Objectionable Advertisements) Act, 1954 and Rules there under
- The Pharmacy Act, 1948 and Educational Regulations there under
- The import Trade Regulation for the grant of Essentiality Certificates to the Pharmaceutical Industries
- The Poisons Act, 1919 and Karnataka Poisons Rules, 1966
- The Narcotics and Psychotropic substances Act, 1985

The Drugs Controller is the Head of the Department and one Additional Drugs Controller, two Deputy Drugs Controllers and two Assistant Drugs Controllers at the State Head Quarter assist him. They are in-charge of licensing, manufacturing, intelligence, price control, hospital inspection and advertisement wing duly assisted by the Drugs Inspector. A separate Assistant Drugs Controller is in-charge of the Board of Examining Authority for the purpose of conducting examinations in Diploma in Pharmacy. For effective functioning of the department the entire state has been divided into six divisions. Each division is under the charge of an Assistant Drugs Controller and he is assisted by Drugs Inspectors of the districts.

Apart from these the following schemes are also in vogue in the state of Karnataka.

- Rural Health Component of Minimum Needs Program,
- National Malaria Eradication Program
- National Filaria Control Program,
- National Program for Blindness Control,
- Prevention and Control of the communicable diseases like Diarrhea, Kyasanur Forest Diseases, Japanese Encephalitis etc.,
- School Health Program,
- Nutrition Program,
- Nutrition Education and Demonstration,
- Laboratory Services and Vaccine Production Units,
- Education and Environmental Sanitation,
- Health Education and Training Program
- Curative Services.

➢ HIV/AIDS:

Globally HIV/AIDS is currently perceived as a developmental issue rather than a mere public health problem. This is because HIV/AIDS affects adults in the reproductive age group thereby changing the demographic structure of the community. Consequently, many African countries have experienced sharp decline in their National Income. HIV/AIDS is also increasingly associated with poverty and is inseparable from issues such as unemployment and migration. Women are especially vulnerable to HIV infection due to biological, social and economic reasons. During the past decade HIV has also not sparead children who

are increasingly affected and infected by this virus, leading to increase in infant/child mortality and morbidity.

4.16 Implications / Significance of the HIV/AIDS trend in Karnataka

- The number of HIV infected individuals is showing a steady increase in the last 11 years.
- The number of HIV infected women is on the rise. 1% to 6% of women attending antenatal clinics are infected. This is indicative of HIV infection in the "general population". Most of these women report sexual contact with a single partner –their husbands. This points to the urgent need for adoption of safer sex practices among all sections of the society.
- The rate of infection among STD (Sexually Transmitted Diseases) clinic attainders is also increasing. This indicates high rate of infection.

Table No 4.20 Modes of transmission in Karnataka:

Route of Transmission	Sero-Positive	Percent
Sexual	34,206	85.69
Through Blood and Blood products	886	2.57
Through infected syringes and Needles	249	2.24
Perinatal Transmission	1327	2.72
Others (Not known / not specified)	4492	6.78
As on 31-12-2004 Total	41,160	100

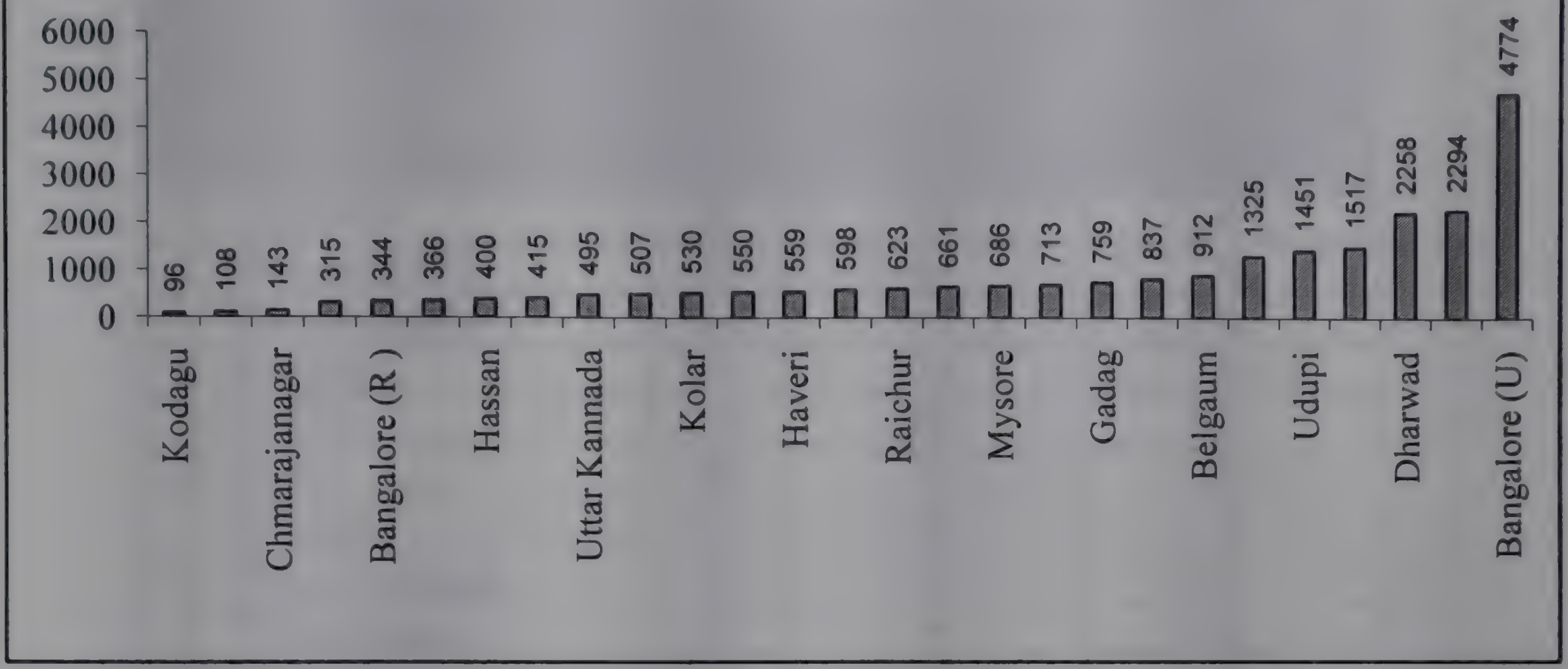
Source: Karnataka State AIDS Prevention Society Reports

Table No 4.21 District-wise HIV +ve cases, AIDS cases, Death due to AIDS in KARNATAKA

Sl. No.	Division / Districts	1987 to December 2004		
		HIV +ve	AIDS cases	Death due to AIDS
BANGALORE DIVN.				
1	Bangalore (U)	5665	670	73
2	Bangalroe (R)	539	32	7
3	Tumkur	998	55	3
4	Shimoga	844	119	7
5	Chitradurga	655	25	3
6	Davanagere	920	452	38
7	Kolar	831	59	8
MYSORE DIVN				
8	Mysore	1344	26	8
9	Chamrajnagar	436	3	0
10	Mandya	1176	78	9
11	Mangalore	1675	836	65
12	Udupi	2027	938	35
13	Madikeri	183	6	1
14	Chikmagalur	546	46	5
15	Hassan	762	27	2
16	Belgaum	2130	810	71
17	Bijapur	1853	5	0
18	Bagalkot	3436	20	7
19	Dharwad	3298	317	62
20	Haveri	1033	45	10
21	Gadag	1253	43	3
22	Karwar	711	129	10
GULBARGA DIVN				
23	Gulbarga	1169	24	3
24	Raichur	1210	41	8
25	Bidar	218	2	2
26	Bellary	3200	61	0
27	Koppal	1379	16	2
KARNATAKA TOTAL		**39491**	**4885**	**442**
1	Other States	1651	193	17
2	Foreigners	18	5	4
GRAND TOTAL		**41160**	**5083**	**463**

Source: Karnataka State AIDS Prevention Society Reports

Graph-4.4 Number of HIV Positive Cases in Karnataka-2003-04



Source: Directorate of Health Services, Ban galore

It can be noted that Ban galore urban district is again in lead position as far as number of HIV positive cases are concerned. Next to follow are the districts of Bellary, Dharwad and Bagalkot. With regard to both TB and HIV the district Kodagu is the least affected one. Majority of districts in north Karnataka have comparatively larger cases of HIV. Recently, the deadly combination of TB and HIV has been considered to be a major threat and more attention needs to be paid by the authorities in understanding this dimension of the disease scenario for effective design and implementation of intervention strategies.

4.17 Nutritional Status:

The state also seems to be suffering from the burden of undernourishment and nearly 55 per cent of the children suffer on account of being undernourished. The data on different districts in the state also shows that there are certain pockets where the level of undernourishment is higher than the state average. Thus, the challenge of eradicating undernourishment especially among children needs immediate attention of policy makers and administrators. The following table gives the nutritional status of children in different districts of the state.

Table :- 4.22 Nutrition Status 2005

SL No.	District	Percentage of children to Total children weighed		
		Normal	Below normal	Malnourished
1	Bagalkot	42	58	0
2	Bangalore(U)	53	47	0
3	Bangalore(R)	54	46	0
4	Belgaum	44	55	0
5	Bellary	33	66	1
6	Bidar	30	70	0
7	Bijapur	37	63	0
8	Chamarajnagar	47	53	0
9	Chickmagalur	54	46	0
10	Chitradurga	42	58	0
11	D K	57	43	0
12	Davanagere	42	57	1
13	Dharwad	45	54	1
14	Gadag	41	59	0
15	Gulbarga	38	61	1
16	Hassan	52	47	0
17	Haveri	40	60	1
18	Kodagu	64	36	0
19	Kolar	47	53	0
20	Koppal	34	64	2
21	Mandya	56	44	0
22	Mysore	47	53	0
23	Raichur	31	68	1
24	Shivamoga	45	54	0
25	Tumakur	55	45	0
26	Udupi	60	39	0
27	Uttara Kannada	53	46	0
State Total		**44**	**55**	**0.40**

Source: *Directorate of Health Services, Bangalore.*

On the whole it can be stated that the state of Karnataka has high prevalence of communicable diseases and the threat of HIV/AIDS seems quite alarming. About 85 per cent of HIV/AIDS is caused by sexual transmission. The inter district variation in the incidence and prevalence of different types of diseases shows that different types and magnitude of interventions are required to

meet the needs of the community in this regard. In this background provision of additional resource for combating them deserves immediate attention. The need is also felt to strengthen the health care infrastructure to meet the needs of HIV/AIDS patients.

In the next chapter an attempt is made to present the health care financing in general in the state and in Dharwad district.

Chapter V

Health Care Financing in Karnataka State

5.1 Introduction:

Health Status and Health Care Facilities in the State have already been discussed in chapter IV. In this chapter an attempt has been made to understand the financial flow, institutional and organizational structure, delivery of Health Care Services, Health Care Activities, etc of the health sector in the Karnataka State and Dharwad district. In this chapter, health care financing activities have been presented in the following sections.

1. Introduction
2. Administration and Direction
3. Delivery of Health Care Services: Public Institutions
4. Financing of Health in Karnataka
5. Healthcare Expenditure
6. Health Care Financing in Dharwad District

5.2 Administration and Direction:

The Director of Health and Family Welfare Services is the Head of the Department and is responsible in providing the necessary health care services to the community by way of implementing various National and state health programs in the state. The detailed organizational Chart presented below explains the administration and direction of the health sector of the State. The Director of Health and Family Welfare Service is assisted by one Additional Director, eleven Joint Directors, one Demographer and fourteen Deputy Directors. These officials act as technical advisors to the Director. Similarly, the

Director is also assisted by a Chief Administrative Officer in all matters pertaining to Finance, Accounts and Administration of the Department.

At the **Divisional Level,** there are four Divisional Joint Directors of Health and Family Welfare Services stationed at Bangalore, Belgaum, Gulbarga, and Mysore. Two Deputy Directors assist these Divisional Joint Directors.

The Divisional Joint Directors of health and family welfare services are responsible for supervision and effective implementation of various National and State health programs including family welfare program and MCH services in the districts coming under their jurisdiction.

At the **District Level**, the District Health and Family Welfare Officers are responsible for supervision, providing guidance, prompt and effective implementation of various National and State health programs including family welfare program and MCH services through the network of various types of health and medical Institutions in their respective districts. The district officers are assisted by District T B officers, medical officers of district laboratories, medical officers (FW & MCH) and regional assistant chemical examiners in the implementation of various national and state health programs. The district surgeons of district hospitals located at district head quarters are responsible for providing curative and promotive services including referral services. At the sub-divisional level, the assistant district Health & Family Welfare officers are responsible for supervision, providing guidance to the medical officers of primary health centers, primary health units and field staff for prompt and effective implementation of various National and State health programs. This is done through the network of various types of health and medical institutions other than major and specialized hospitals under their respective jurisdiction.

Chart 5.1 Referral System in the Public Sector Health System in Karnataka

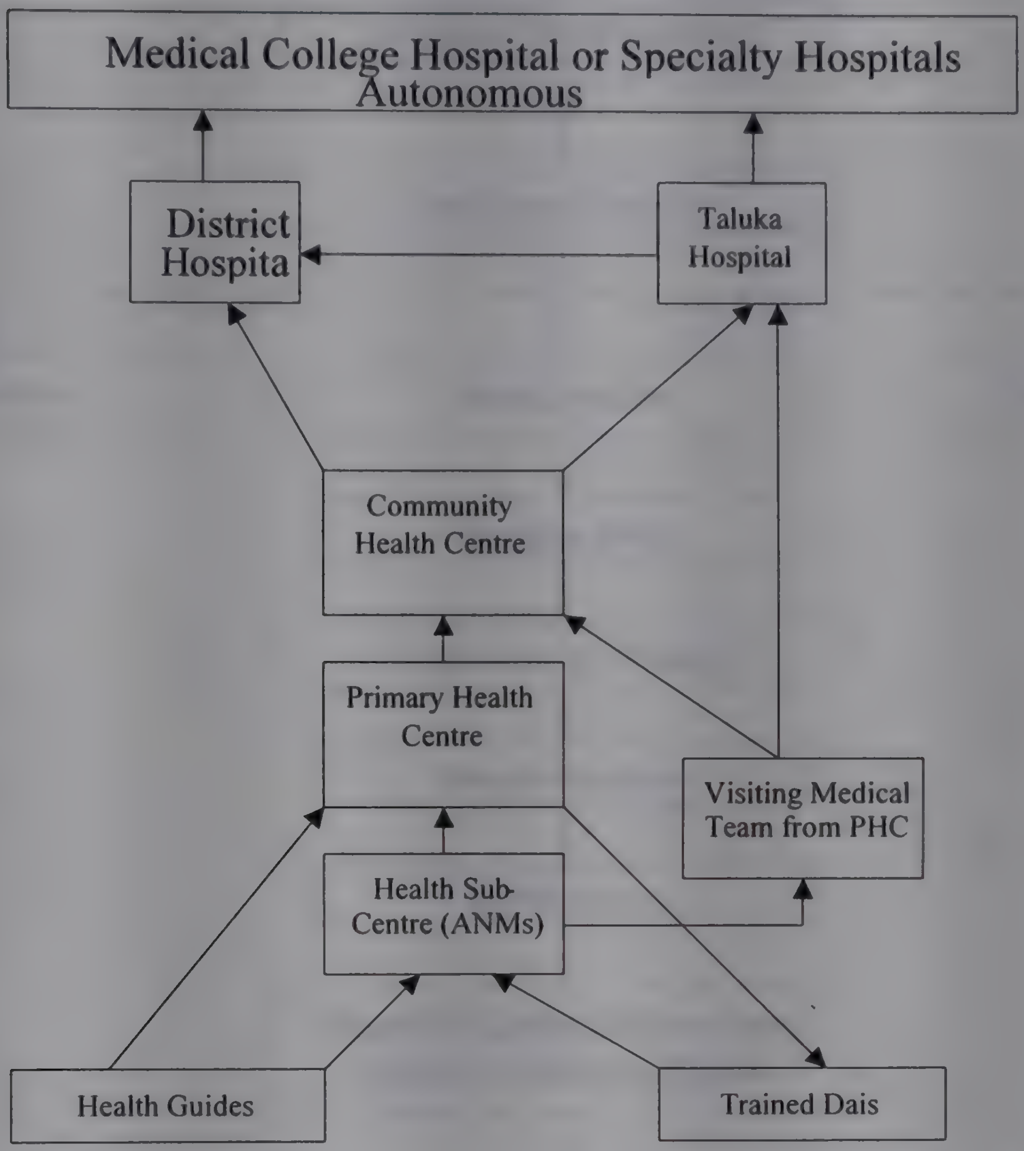


Chart 5.2 Administrative Structure of Department of health in Karnataka

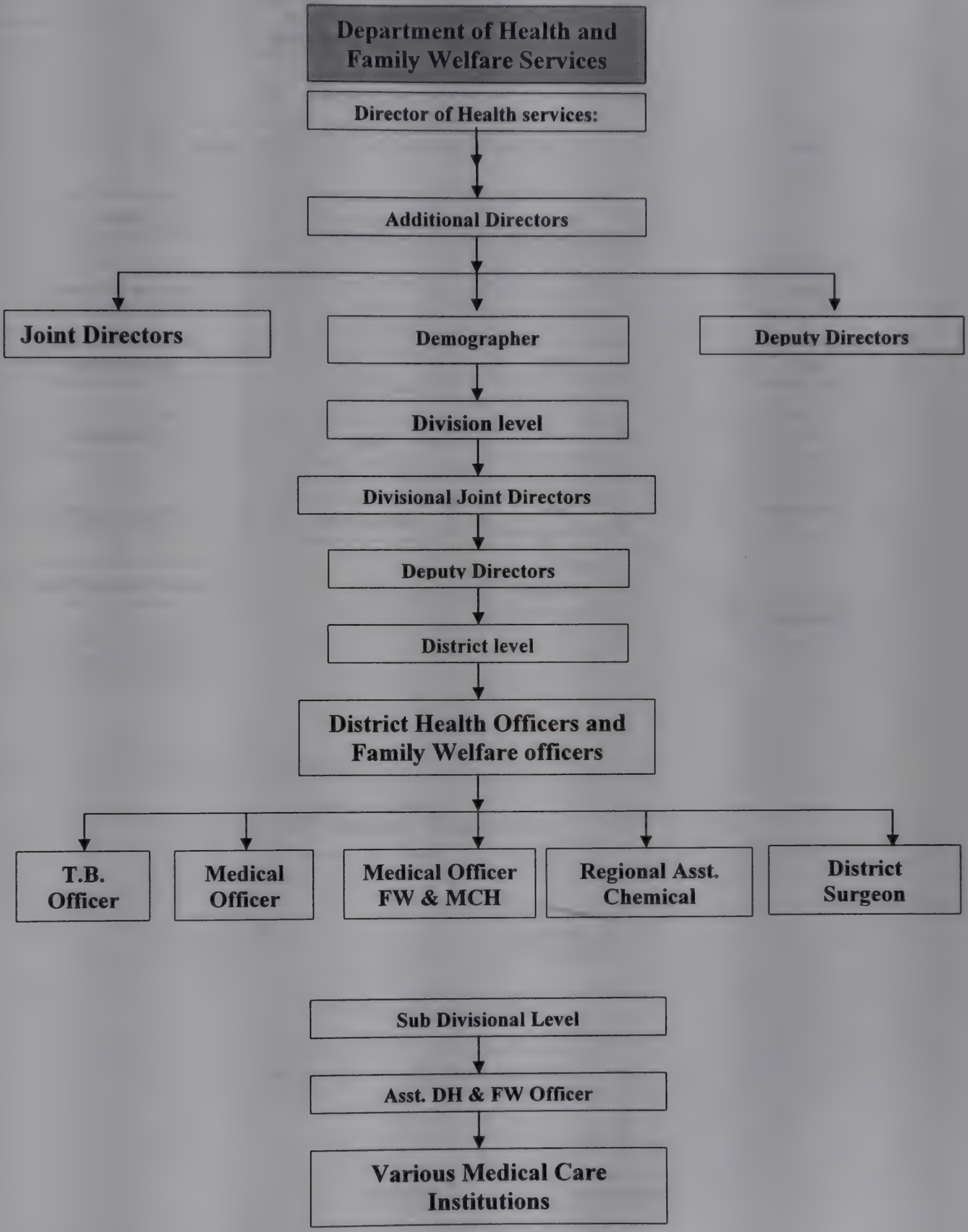
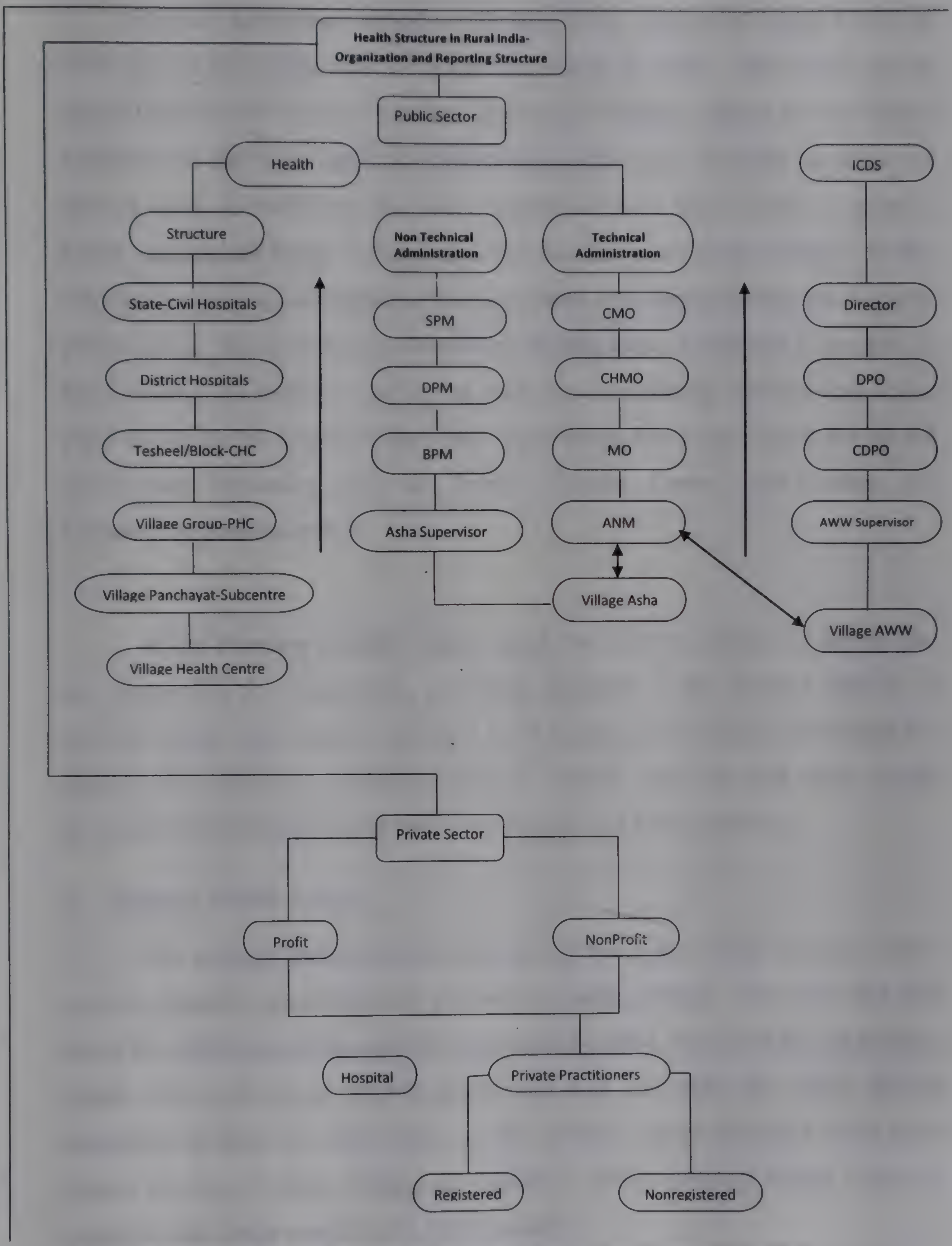


Chart 5.3 Organizations and Reporting Structure of Healthcare Systems in India



Source : MOHFW:ICHS & Sample Survey of Health Facilities, 2005-2008.

programmes including Family Welfare Program and MCH services.

5.3 Delivery of Health Care Services: Public Institutions:

Primary health care would be the key to the success of health for all by 2000 AD as the Declaration of Alma Ata stated in 1979. This has to be an integral part of the country's health system, of which it should be the central function and the main agent for delivering health care. In order to attain the desired level of health for all, every individual must have access to primary health care and all levels of comprehensive health system in the country. In this context, the State has adopted the primary health care approach with the National perspectives. So, the concept of **Primary Health Care Approach** is the driving force behind the policies and also a basis for formulating strategy and action plans in the health sector of the state. This vision has been carried out by the three main structures such as Primary Health Center, Sub-Centers and Community Health Centers.

At the **Primary Health Center level**, the medical officers of health care are responsible for supervision, providing guidance to the medical officers of primary health units and to the field staff coming under their jurisdiction for prompt and effective implementation of various National and State health programmes including Family Welfare Program and MCH services.

- ***Primary Health Center***

The primary health centers provide all the basic health services which include curative, preventive and promotive health services. The state has laid down the policy as per the national norms that by 2004, there will be one primary health center for every 30,000 population and one PHC for every 20,000 population in hilly and tribal areas, so that services can be provided to the rural people as near to their villages as possible. Every primary health center is supplied with drugs worth Rs.30, 000 annually.

In Karnataka, there is a chain of Institutions known as primary health units, which also provide curative, preventive and promotive health services.

The government has decided to upgrade these institutions to primary health centers in a phased manner by providing minimum additional inputs rather than establishing new primary health center. Each primary health unit covers approximately a population of 15-20 thousand. Drugs worth Rs.20, 000 are supplied to every primary health unit annually.

- ***Health Sub-Centers***

It is the intention of the Government of India and the state government to have one health sub-center for every 5000 population in plain areas and one sub-center for every 3,000 population in the hilly and tribal areas. Each sub-center is managed by one female and one male junior health assistant and drugs worth Rs.2, 000 per annum are supplied for treatment of minor ailments.

The minimum needs program under the health sector lays down greater emphasis on promotive and preventive aspects of health care. However, the integrated approach is being followed at present to provide preventive, pro motive and curative services in rural areas in Karnataka State.

- ***Community Health Center***

The norm of the Government of India and the state provide for the establishment of a community health center for one lakh population. This community center covers nearly 4 primary health centers. It is the policy of the government to upgrade all the taluk level institutions into 30-bedded hospitals and taluks located at sub-divisional headquarters into 50-bedded hospitals. These institutions will serve as rural referral hospitals for the population living in rural areas.

In the 30-bedded hospitals there will be minimum of 4 specialties viz., General Medicine, General surgery, Obstetric and Gynecology, and Dental

surgeon. In the 50-bedded hospitals in addition to these specialties there is an ENT specialist and Pediatrician.

5.4 Financing of Health in Karnataka:

The total health expenditure and per capita health expenditure at current and constant prices (2004-05 prices), along with this health expenditure as a share of total budgetary expenditure and as a share of NSDP (Net State Domestic Product). Health expenditure of the state during 1990-91 at current prices is Rs.38729 lakh, which increased to Rs. 598058 lakh, means 15 times increase in the 20 years of time period which is 12 times more than the previous. This impressive picture gets offset when we see these data in per capita real (2004-05 prices) prices. In per capita real term health expenditure has increased only 3.6 times i.e. per capita health expenditure at constant prices has increased from Rs.215 in 1990-91 to Rs.777 in 2009-10.

Observing the present health condition in Karnataka state this expenditure is significantly low. On the other hand, health expenditure as a share of total expenditure is also low. In the reference period health expenditure as a share of total expenditure is between 6 per cent and 11 per cent. In 1990-91 it was 7.8 per cent, which increased to 10.7 percent. In the following years, it started decreasing and raised 6.1 per cent during 2004-05, which is the lowest among the 20 years of the selected time period.

Table No 5.1 Health Expenditure in Karnataka from 1990-91 to 2009-10

	Current Prices		Constant Prices		As a share of NSDP	As a share of Total Expenditure
Year	Actual	Per Capita	Actual	Per Capita		
1990-91	38729	87	96241	215	1.5	7.8
1991-92	46484	102	100066	220	1.4	7.4
1992-93	50062	109	101100	219	1.4	7.1
1993-94	55578	118	103674	220	1.3	6.9
1994-95	69793	145	117651	245	1.4	7.9
1995-96	80914	165	123619	252	1.4	7.8
1996-97	87668	176	125984	253	1.3	7.3
1997-98	118544	235	162259	321	1.6	9.4
1998-99	158574	310	202673	396	1.7	10.7
1999-00	187354	362	233317	450	1.9	10.5
2000-01	174872	333	205992	392	1.7	8.9
2001-02	171827	326	200763	381	1.6	7.8
2002-03	152100	285	174872	328	1.3	6.3
2003-04	172591	320	187535	347	1.4	6.4
2004-05	192637	352	192637	352	1.3	6.1
2005-06	289755	530	272777	499	1.7	8.2
2006-07	301532	544	267677	483	1.5	7.3
2007-08	456758	817	383830	686	1.9	10.0
2008-09	541233	959	422471	749	2.0	10.6
2009-10	598058	1050	442130	777	2.0	10.5
Growth Rate	14.36	12.94	7.97	6.63	1.45	

Source: Various Issues of RBI-Study on State Finances

5.5 Healthcare Expenditure:

Overall Health Expenditure in Karnataka:

Table No 5.2 Total Health Expenditure in Karnataka 2004-05

Expenditure	Rs in Million	Per capita (in Rs)	%	THE* as%0f SDP
Public	10794.86	197.35	28.2	0.73
Private	26098.69	477.12	70.6	1.76
External	43.83	0.80	0.1	0.00
Total	36937.37	675.27	100.0	2.49
SDP at Market prices	1485210.00			

**THE=Total Health Expenditure.*

Source: CMDR Study - **Developing Health Accounts for Selected Indian States**

In the above table, the details of sources that financed the health care expenditure incurred in the state of Karnataka are presented. It can be noted that health expenditure was to the extent of Rs. 36,937 million out of which public expenditure accounted for about 29 per cent and private expenditure shouldered 70 per cent of the share. External funds seem to be very insignificant as far as their share in the total health expenditure, is concerned. The state spends about 2.49 per cent of State Domestic Product (SDP) on health care. On an average the per capita expenditure on health in the state amounted to Rs. 675.

5.6 Health Care Financing in Dharwad District:

Table No:5.3 Dharwad District Public Expenditure During 2008-09 (Rs. In lakhs)

Health care functions	**Public expenditure**	**%**
services of curative care	677.41	28.80
Medical goods dispensed to outpatient	35.25	1.50
Ancillary services to medical care	37.30	1.59
Prevention and public health services	1417.11	60.26
Health administration and health insurance	5.02	0.21
Capital formation for health care provider institutions	84.54	3.59
Expenditure not specified by kind	95.09	4.04
Total	2351.74	100.00

Source: Zilla Panchayat's Link Doccuments

If we look at the public health related expenditure towards different functions of health care, the following picture emerges. The public expenditure is tilting towards Prevention and Public health services which is to the extent of about 60 per cent and 28 per cent is towards curative care.

Table No 5.4Estimated Household expenditures on Health for different Health Care Functions in Dharwad District during 2008-09 (Rs. In lakhs)

Health care functions	**Household**	**%**
services of curative care	190.45	2.1
Day cases of curative care	913.95	10.1
Outpatient dental care	2.62	0.0
All other specialized medical services	620.24	6.9
Ambullatory surgery	11.19	0.1
Chemo therapy	1.75	0.0
All other outpatient curative care	10.70	0.1
Services of curative home care	2.55	0.0
prescribed medicines	2088.39	23.1
Over the counter medicines	4212.68	46.6
Atherapeutic appliances and medical durables	86.97	1.0
glasses and other vision products	20.23	0.2
Medico technical devices including wheel chairs	7.28	0.1
Clinical laboratory	132.26	1.5
diagnostic imaging services	186.71	2.1
All other miscellaneous ancillaries	84.42	0.9
MCH and family planning	458.28	5.1
Total Estimated Health Expenditure by the Households	**9030.68**	100.0

Source : CMDR study by Prof.V B Annigeri

Table No 5.5 Estimated Household expenditures on Health for different Health Care Functions in Dharwad District during 2008-09 (Rs. In lakhs)

Health care functions descriptions	Actuals	**%s**
services of curative care	1753.45	19.42
Medical goods dispensed to outpatient	6415.55	71.04
Anciallary services to medical care	403.40	4.47
Prevention and public health services	458.28	5.07
Total	9030.68	100.00

Source: CMDR study

The Households spent about 71 per cent towards purchase of medicines and medical goods from the retail sector and about 19 per cent for services of curative care.

Table No 5.6 Estimated Health Care Expenditure by Source

Source	Expenditure	%
Household	9030.68	75.53
Public*	2351.74	19.67
Local body	31.03	0.26
Parastatals	95.57	0.80
NGO	10.25	0.09
Firms	54.46	0.46
Private Insurance	382.27	3.20
Total	11956.00	100.00

Source: CMDR study

It can be observed from the above table that out of the total resources flowing into the health sector of the district, Households contribute about 75 per cent which is also supported by other studies at the national level and at different state levels. Public expenditure which includes both state and union governments, accounted for about 19 per cent. Except Private Insurance which was to the extent of 3.20 per cent, rest of the sources did not have any significant share in the total health expenditure. This only reflects the issue that majority of the burden as far as health care financing is concerned falls on the households.

Observations:

Observing the present health condition in Karnataka state the expenditure is significantly lower in terms of per-capita expenditure as well as in comparison to the SDP. On the other hand, health expenditure as a share of total expenditure is also lower. In the reference period health expenditure as a share of total expenditure is between 6 per cent and 11 per cent. In 1990-91 it was 7.8 per cent, which increased to 10.7 percent. Though it seem to be increasing in terms of share of total public expenditure, with regard to per capita expenditure much ground needs to be covered.

In the chapter that follows, an attempt is made to present the HIV/AIDS scenario in Karnataka state and the district of Dharwad.

Chapter VI

Scenario of HIV/AIDS in Karnataka State

HIV /AIDS THE NEW "PLAGUE"

In the previous chapter overall health care financing scenario in the Karnataka state and Dharwad district in particular was discussed. In this chapter, an attempt is made to sketch HIV/AIDS scenario in Karnataka state with special reference to Dharwad district.

The discussion is presented as indicated below.

1. Introduction
2. The global Situation:
3. Extent of HIV in India
4. National Level Progarmme Management
5. Karnataka state profile
6. Health Care Facilities for HIV/AIDS in the Karnataka State
7. HIV Prevalence in the district of Karnataka state
8. HIV/AIDS Scenario in the Districts of Karnataka
9. Profile of the District

6.1 Introduction:

Acquired Immune Deficiency Syndrome (AIDS), proved to be one of the most destructive and dreaded diseases, since it was first recognized in 1981, has so far killed more than 25 million people across the globe. The disease is a serious setback for healthy social, economic and demographic development. It is no more a mere health crisis, but it is development and security crisis too. It has a disturbing impact on rates of infant, child and maternal mortality, life expectancy and economic growth. This in turn has resulted in intense burden of suffering among individuals and households.

In 2005 alone, the epidemic claimed about 3.1 million lives, more than half a million being children. Despite preventive measures and improved access to anti retroviral treatment in many parts of the world, the estimated number of HIV infected people today has reached nearly 41 million . Besides, about 5 million were newly infected in the year 2005. Over the next decade, it is estimated that about 1 million people will have died without proper treatment and care. The seriousness of the disease is well understood by the increasing number of HIV affected people and deaths thereby. Therefore, providing adequate and affordable treatment and care to people living with the virus, and enabling people who have not acquired the virus to protect themselves against the virus, are the biggest areas in need of intervention.

2009 global HIV and AIDS estimates

❖ Children living with HIV	2.5 million
❖ New HIV infections in 2009 ,	370 000
❖ Deaths due to AIDS in 2009,	260 000

Fearful News from UNAIDS Report

- Over 7000 new HIV infections a day in 2009
- About 97% are in low and middle income countries
- About 1000 are in children under 15 years of age

Today many countries are facing the AIDS crisis, which only shows the fast spread of the virus. It becomes essential here that we understand the extent and intensity of the disease around the world.

6.2 The global Situation:

The history of AIDS is a short one. As recently as the 1970s, no one was aware of this deadly disease. Since then the global AIDS epidemic has become one of the greatest threats to human health and development. The origin of AIDS

and HIV has puzzled scientists ever since the illness first came to light in the early 1980s. The first recognized cases of AIDS occurred in the USA in the early 1980s.

Table No: 6.1 Present alarming status of the epidemic

World wide Estimated HIV/AIDS Cases and AIDS deaths end of 2008	
Category wise PLWHIV/AIDS	Estimate (in Millions)
People living with HIV/AIDS	33.4
Adults living with HIV/AIDS	31.3
Women living with HIV/AIDS	15.7
Children living with HIV/AIDS	2.1
People newly infected with HIV	2.7
Children newly infected with HIV	0.43
AIDS deaths in 2008	2
Child AIDS deaths in 2008	0.28

Source: UNAIDS November 2009

- More than 25 million people have died of AIDS since 1981.
- Africa has over 14 million AIDS orphans.
- At the end of 2008, women accounted for 50% of all adults living with HIV worldwide
- In developing and transitional countries, 9.5 million people are in immediate need of life-saving AIDS drugs; of these, only 4 million (42%) are receiving the drugs

Globally, it was estimated that there were 33 million people infected with HIV in 2007 with 2.7 million new infections and 2 million HIV related deaths. Nearly an estimated 5 million people infected with HIV lived in Asia in 2007 and about 38000 people were newly infected (2008 UNAIDS Global Epidemic Updates).

Table No: 6. 2 Region wise HIV/AIDS Cases and AIDS Deaths in the end of 2008

Region	People Living With HIV/AIDS		Adult prevalence	AIDS Deaths	
	Actual	%		Actual	%
Sub-Saharan Africa	2,24,00,000	67.05	5.20%	14,00,000	71.25
North Africa & Middle East	310,000	0.93	0.20%	20,000	1.02
South and South-East Asia	38,00,000	11.37	0.30%	2,70,000	13.74
East Asia	850,000	2.54	<0.1%	59,000	3.00
Oceania	59,000	0.18	0.30%	2,000	0.10
Latin America	20,00,000	5.99	0.60%	77,000	3.92
Caribbean	240,000	0.72	1.00%	12,000	0.61
Eastern Europe & Central Asia	15,00,000	4.49	0.70%	87,000	4.43
North America	14,00,000	4.19	0.40%	25,000	1.27
Western & Central Europe	850,000	2.54	0.30%	13,000	0.66
Global Total	3,34,09,000	100.00	0.80%	19,65,000	100.00

Source: Computed from the UNAIDS November 2009 Report

Sub Saharan Africa is the hardest-hit and 22.4 million i.e. Two-thirds of all people living with HIV are in Sub-Saharan Africa, An estimated 1.4 million people died of HIV related illnesses in this region. South and South-East Asian countries occupy second place; 3.8 million HIV/AIDS cases are found in this region but Prevalence rate is very low, this is because of region having populated countries.

In Asia, Thailand has experienced the epidemic early and severely. The large populous countries China, India, and Indonesia-are of particular concern though they have a low to moderate level epidemic. According to the report of the UNAIDS, majority of people with HIV (around 95 per cent of the global total) live in the developing world.

Programmes to promote correct scientific information regarding sex, sexuality, and safer sexual behavior may be opposed by self-appointed "guardians of public morals" and other vested interests having illusory fears about increase in promiscuity (Vas & de Souza, 1991).

6.3 Extent of HIV in India:

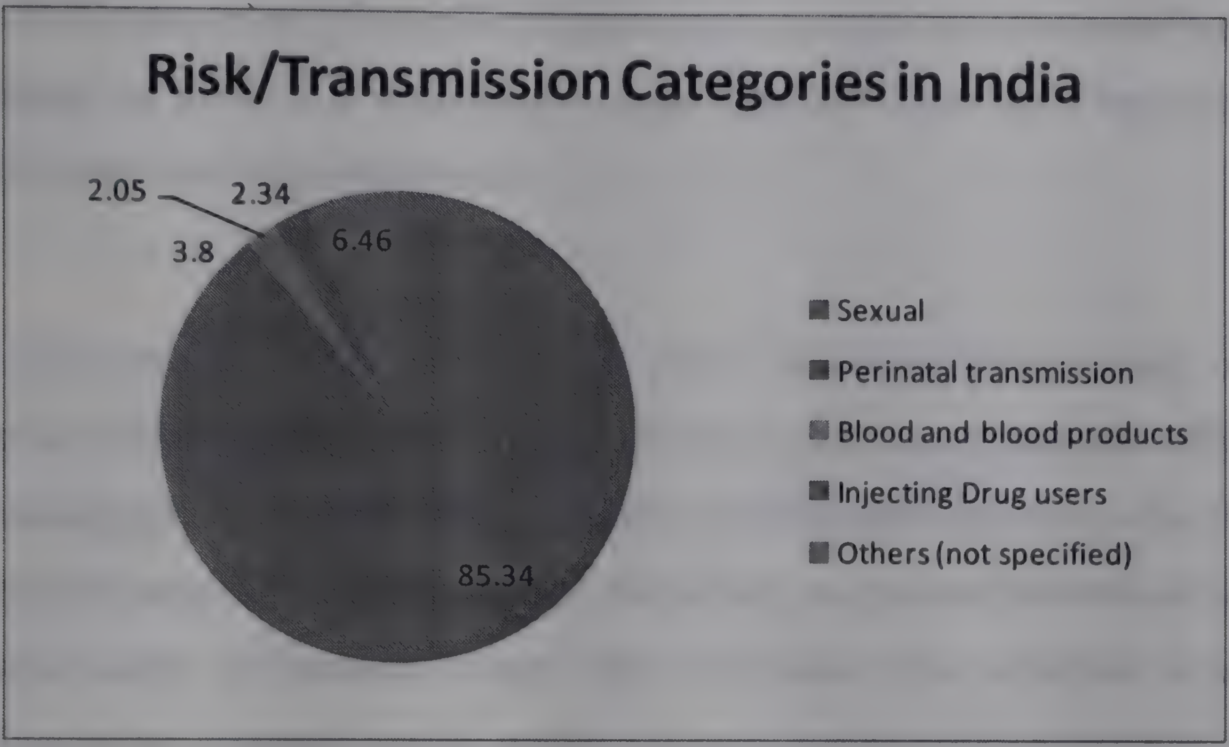
In a country like India, socio-cultural barriers come in the way of containing its spread. The first HIV case was detected way back in 1986 and the number of infected ones has risen to 5.7 million today, declaring India the second largest population of infected people in the world.

Table No: 6.3 Risk/Transmission Categories for AIDS in India (As on 31st August2006)

Risk/Transmission Categories	No. of Cases	Percentage
Sexual	106669	85.34
Prenatal transmission	4755	3.8
Blood and blood products	2563	2.05
Injecting Drug users	2930	2.34
Others (not specified)	8078	6.46
Total	**124995**	**100**

Source: National AIDS Control Organization, Ministry of Health & Family Welfare, Govt. of India.

Graph No: 6.1 Risk/Transmission Categories for AIDS in India



A look at the type of transporter of the HIV infection, In India HIV infection spreads mainly through unsafe sexual contacts that are more than 85 percent and prenatal transmission is around 4 percent. It may be because of illiteracy, lack of awareness, migration, and poverty. Through blood transmission is 2.05 percent. For this human resource working in the blood banks are responsible.

The high risk groups being the carriers of infection can be mentioned as commercial sex workers, homo sexual, migrant workers and drug users. It is shocking to known that the epidemic is not limited to these risk groups alone, but has spread rapidly among the general population too, from urban to rural places. As in the case of other affected countries, in India too, the matter of grave concern is that over 35 percent of all reported AIDS cases occur among young people in the age group of 15-24 years, majority of them being infected through unprotected sex. It is understood that in India adolescents are particularly vulnerable to the disease. This is due to their natural behavior of experimentation and affiliation combined with ignorance. Indian adolescents comprise one fifth of the total population, which makes to 225 million. This large group is undoubtedly a very healthy and rich human resource which is banked upon for a

socially and economically healthy society. Moreover, emotional, social and economic consequence of unsafe behavior tends to have much greater and long term impact on them. It is saddening to learn that HIV cases have been reported in all the states and union territories.

It is revealed that the scale of prevalence is now shifting towards women with an accompanying increase in vertical transmission and pediatric HIV. Due to increasing gender disparities, the epidemic affects more and more who, by and large, are the target of negative results. According to a recent estimation, women constitute nearly 25 percent of new HIV infections. The infection is rapidly spreading in the informal sector, which accounts for as much as 95 per cent of the work force in the country. This is a resultant picture of factors prevailing in the country such as low productivity, poor living conditions, inadequate social protection and poverty.

The infection has become more complex because of its effect on the whole scenario-societies, communities, families and individuals. The HIV/AIDS infection among adult members of the family has marred the well being of children. The health care support and social support systems have been facing challenges to improve the quality of health of children.

In ancient India, sexually explicit sculptures adorned temples. Rituals covered marriage, sexual intercourse (nuptial nights), pregnancy and childbirth. But, in present day Indian society, talking about sex is taboo (Solomon & Ganesh, 2002).

In India, with a large population and population density, low levels of literacy and awareness, HIV/AIDS has come to be the most challenging health problems ever faced by the country. Today, the epidemic is in an advanced stage

in states like Maharashtra, Tamil Nadu and Manipur. According to one estimate, about 24 to 40 percent of the total occupancies in the major hospitals of Mumbai and Imphala are HIV/AIDS related cases. The epidemic has rapidly spread across other western & southern states in the last 4 years. In the north-east also, there is a high prevalence of HIV injecting drug users.

The states of Andhra Pradesh and Karnataka have also seen a rapid rise of HIV infections leaving Tamil Nadu behind. Other states have a lower rate of HIV so far, but the presence of high rates of sexually transmitted diseases as well as the presence of sexual networks and migration are indicators of high possibility of HIV infection. One of the great contributing factors is the injecting drug use, which is on a rapid rise. As said earlier, infection is spreading from urban to rural areas and from groups practicing risk behavior to the general population. It is believed that 1 per cent of all pregnant women are infected in 5 states. 89 percent of reported cases are in the sexually active & economically productive age group of 18-40 years. Apart from adolescents, the infection is spreading increasingly among women. An estimated 25% of infections are currently among women. Moreover, the female to male ratio of infection is rising sharply. About 30000 new born babies are infected. About 75 percent of infections are through sexual transmission, 8 percent through intravenous drug use, and another 8 percent through blood transfusion. Due to hetero-sexual transmission, active sex industry and interacting with less studied patterns of bisexual or injecting behaviour, the WHO/UNAIDS estimates show that India has the largest number of HIV positive cases in the south and south east Asian region. With its large and increasing population, India is expected to have the largest concentration of AIDS patients in the world if the current rate of transmission continues.

In some areas, HIV has become common in villages as well as in cities. It was earlier thought that HIV infection in India was concentrated among urban prostitutes and their clients and in drug injectors in a few states. Now, it is

evident that the virus is firmly embedded in the general population, among women who are put to risk with their only behavior of having sex with their husbands. It is also evident that in at least 5 states, more than 2 per cent women in urban areas are infected.

The 1991 census revealed that 5% of the sexually active male population comes care centre homo-sexual population of 13.5 million homosexual males in India. This figure was obtained by calculating the sexually active male population as 60% of the population, and then computing 5% of that figure. The males considered for this calculation were falling between the ages 15 and 60 years. However, nearly 50 million Indian males were found to be practicing homosexual behavior. In Chennai city in Tamil Nadu, a study carried out in slum areas found that 6% of men were homosexuals. Almost 7% of the men who had sex with other men were HIV positive and more than half of them were married. It becomes necessary to refer to this aspect of sexual behaviour because of its contribution to HIV/AIDS statistics.

In the north-east of India, HIV transmission concentrated mainly among drug injectors and their sexual partners. Many of these also buy or sell sex. This is common in the states of Manipur, Mizoram and Nagaland as these states lie adjacent to the drug-trafficking ‘Golden Triangle’ zone. In Manipur, a drug injection-driven epidemic has been prevalent for more than a decade. About 20% of female sex workers said they injected drugs, according to behavioral surveillance. The state (Manipur) recorded HIV prevalence in drug injectors at 24% in 2003, said to be the lowest level detected among injecting drug users in that state since 1998. In other states lying in the north-east about half the sex workers reported injecting drugs.

In Nagaland, in 2002-03, the HIV epidemic prevalence was recorded to be 14%, which makes it evident that the epidemic among drug injectors is well established.

Down south, drug injection is not a rare concept. In Tamil Nadu, there has been a sharp rise in HIV infections among drug injectors. About 39% of the injectors were HIV infected in 2003, compared with 25% in 2001. In Chennai city, almost 64% of injectors were HIV positive in 2003. These drug users transmit the virus to their sexual partners, which will further multiply the infections.

6.4 NATIONAL LEVEL PROGRAMME MANAGEMENT:

For managing NACP at the national level, the following organizations were established:

National AIDS Committee: This was constituted in 1986 under the Chairmanship of Union Minister for Health and Family Welfare in order to bring together various ministries, NGOs, and private institutions for coordinated implementation of the programme. This committee is the apex body that provides policy directions, monitors programme performance, and forms multisectorial collaborations (MOHFW, 1999).

National AIDS Control Board: Constituted under the Chairmanship of Secretary (Health), Ministry of Health and Family Welfare, Government of India, the Board has been entrusted with functions, which were being performed by Technical Advisory Committee under the chairmanship of the Director General of Health Services. It is not necessary to approach the Ministry of Finance for funding planned activities since it is represented on the Board. The Board meets at least four times a year or when required by Chairman of the Board or Project Director of NACO. The functions of the Board include: (a) reviewing policies, approving annual operational plan budget, and reallocating funds between programme components; (b) exercising financial and administrative powers beyond the power of Additional Secretary and Project Director (NACO); (c) expediting sanctions, approving procurement and awarding contracts to private agencies; and (d) forming managerial teams and appointing senior programme staff (MOHFW, 1999).

National AIDS Control Organization (NACO): This was established by the Government of India in 1992 to function as an executive body in the Ministry of Health and Family Welfare, New Delhi. An Additional Secretary as its Project Director heads this executive body. Its Secretariat consists of an Additional Project Director, subject specialists, technical, and administrative staff. The WHO has provided a technical assistance of US$ 1.5 million to NACO (MOHFW, 1999). NACO aims at:

(a) Creating an expanded response to the HIV epidemic and monitoring the epidemic in all States by effective surveillance

(b) Providing technical support to State AIDS Control Societies

(c) Ensuring public awareness about the HIV epidemic and its prevention and target interventions at high-risk groups

(d) Reducing vulnerability of people to HIV by ensuring blood safety and promoting condoms for safer sex

(e) Promoting community and family-based care for HIV – infected persons in a conducive environment free of stigma and discrimination and to develop support services for HIV – infected individuals

(f) Alleviating adverse socio – economic impact due to the HIV epidemic

Twelve technical groups were constituted for priority areas of the programme such as epidemiology and HIV testing, targeted interventions, legal and ethical issues, HIV prevention in the workplace, and blood safety and transfusion services. The technical groups act as a technical resource and are mainly responsible for providing operational know-how and to recommend action plans for improving the quality of programme design (MOHFW, 1999).

The presence of HIV infection was first detected in India among sex workers in Chennai in 1986. The first case of AIDS was detected in Mumbai in 1986. Since then, HIV infection has been reported from different parts of the country. India has the second highest number of HIV – infected persons (5.21 million), after South Africa (5.5 million). But prevalence of HIV infected persons in India is still considered "low" (i.e. less than 1 per cent) because India's population is 1.1 billion.

6.5 Karnataka state profile:

Karnataka is one of the six HIV/AIDS high prevalence states in India. According to the Karnataka State AIDS Programme (KSAP), the prevalence of infection has been about 20% in the high risk group. The state is estimated to have a 1.5% adult infection rate, with over 5 lakh cases of HIV/AIDS in 2004. There have been 627 deaths reported in relation to HIV/AIDS since 1987. According to the latest estimates, there are 381 HIV positive children below 14 years and 418 between 15 and 19 years. Karnataka has 78 VCCTC centres where 4062 people have been screened as on June 2005. Presently 1216 people are undergoing treatment. The infection has moved into the general population to the extent that 1.5% of women in antenatal clinics are HIV positive.

The first person with AIDS in Karnataka was identified in 1988. Since then, there is evidence that the HIV epidemic has reached a substantial portion of the population. Based on an estimated prevalence of 1.5% in the general population (reflecting the prevalence among antenatal women) there are about more than 500,000 persons already living with HIV in the state.

Karnataka, a diverse state in the southwest of India, has a population of around 53 million and is one of the leading states in economic development. The state's GDP at constant prices in 2002-03 stood at Rs.72, 399 crore accounting for 5.5 per cent of the national GDP. The State witnessed a healthy

6.5 per cent CARG in the GSDP for the ten year period 1994-2003, being the highest among the leading states in the country.

6.6 Health Care Facilities for HIV/AIDS in the Karnataka State:

Table No: 6. 4 Infrastructure Established under National AIDS Control Programme (As on December 2005)

Infrastructure	No. of Facilities		No. of Patients per Facilities	
	Karnataka	**India**	**Karnataka**	**India**
Sentinel Survillence Sites	66	750	1189	889
VCTC Centres	123	1114	638	599
ART Centres	4	57	19613	11701
PPTCT Centres	59	485	1330	1375
STD Centres	41	829	1913	805
Blood Banks Moderni-	78	1179	1006	566
Targeted Intervention Centres	37	908	2120	735
Community Care Centres	12	85	6538	7847
Drop-in Centres	1	70	78452	9528
Coverage of School	8341	76028		

Abbr. : STD : Sexually Transmitted Disease.

Source: Compiled from Rajya Sabha Unstarred Question No. 2023, March.2006.

A look at the above table shows that the patient's burden is more than the national average. This may be because of high HIV prevalence in the state. Government has to establish more facilities to prevent the epidemic

6.7 HIV Prevalence in the district of Karnataka state:

Table No: 6. 5 District-wise current prevalence in different population groups, by source 2005-2010, Karnataka

District	PPTCT, ANC, 2008	PPTCT, ANC, 2009	HSS, ANC, 2008	Voluntary Blood Donors, 2008	ICTC, Walk-in Males, 2009	ICTC, Walk-in females, 2009
Bagalkot	2.46	1.35	2.13	0.48	25.25	21.48
Bangalore Urban	0.57	0.43	0.75	0.23	6.99	9.23
Bangalore Rural	0.29	0.23	0.38		1.47	3.57
Belgaum	0.95	0.69	1.5	0.39	12.83	12.43
Bellary	0.8	0.6	1.13	0.46	15.94	8.25
Bidar	0.4	0.28	0.13	0.16	8.47	9.06
Bijapur	1.16	0.6	2	0.14	24.09	21.52
Chamarajanagar	0.52	0.28	0.5		3.49	2.43
Chikballapur	0.33	0.26	1.25		2.11	1.98
Chikmagalur	0.55	0.35	0.75	0.25	4.9	9.18
Chitradurga	0.34	0.24	0.5	1.64	4.66	4.44
Dakshina Kannada	0.3	0.22	0.75	0.11	3.36	4.87
Davanagere	0.36	0.23	2	0.19	6.64	7.8
Dharwad	0.87	0.54	0.63	0.08	13.3	17.09
Gadag	0.87	0.48	0.5	0.38	7.86	11.99
Gulbarga	0.65	0.35	1.25	0.13	9.49	7.1
Hassan	0.53	0.33	0.88	0.28	2.64	4.04
Haveri	0.48	0.24	0.63	0	9.89	10.94
Kodagu	0.3	0.39	2.63	0	1.57	2.9
Kolar	0.41	0.23	0.5	0.13	6.25	4.47
Koppal	0.84	0.56	0		19.04	19.06
Mandya	0.63	0.29	0.13	0.33	3.86	7.79
Mysore	0.49	0.29	0.88	0.33	5.85	13.88
Raichur	0.63	0.51	0.5	0.38	26.01	28.07
Ramanagaram	0.73	0.26	0.63		1.53	6
Shimoga	0.36	0.31	1	0.32	2.34	11.19
Tumkur	0.49	0.32	1.13	0.37	4.22	6.73
Udupi	0.61	0.42	0.63	0.07	7.72	9.32
Uttara Kannada	0.49	0.33	0.13	0.22	2.15	7.54
Karnataka	**0.65**	**0.43**	**0.89**	**0.25**	**7**	**9.53**

Source: KHPT Bangalore

A look at the current prevalence across the districts in Karnataka state, an antenatal care prevalence is high in Bagalkot and Bijapur districts. Our study district Dharwad is in third place. But among the general population (undergone HIV Test), Dharwad is in fifth place after Raichur, Bagalkot, Bijapur and Koppal.

HIV prevalence among antenatal clinic attendees exceeded 1% from 2003 to 2006, and dropped to 0.5% in 2007. Districts with the highest prevalence tend to be located in and around Bangalore in the southern part of the state, or in northern Karnataka's "devadasi belt". Devadasi women are a group of women who have historically been dedicated to the service of gods. These days, this has evolved into sanctioned prostitution, and as a result many women from this part of the country are supplied to the sex trade in big cities such as Mumbai.The average HIV prevalence among female sex workers in Karnataka was just over 5% in 2007, and 17.6% of men who have sex with men were found to be infected.

Table No: 6. 6 HIV Prevalence Levels in Karnataka (1998 to 2005):

HIV Prevalence Levels in Karnataka(1998 to 2005)								
Number of sites	**HIV Prev(%)**							
	1998	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
STD 7	16.7	15.5	12.8	16.4	13.6	10.4	12	-
ANC 27	1.75	1	1.68	1.13	1.75	1.25	1.25	1.25
IDU 1	-	1.3	4.23	2	2.26	2.8	0	-

Source: National AIDS Control Organisation, Ministry of Health & Family Welfare, Govt. of India. & Lok Sabha Starred Question No. 20, dated on 22.11.2006

Almost in all risk groups HIV Prevalence has slightly declined. This might be due to preventive initiatives taken by the Government.

Table No: 6. 7 Distribution of registered HIV Cases at ART centers till March,2009(Percentage total population)

PLWHIV	Karnataka			All India		
	Male	Female	Total	Male	Female	Total
Adult	0.12	0.11	0.12	0.06	0.05	0.05
Pediatric	0.01	0.01	0.01	0.005	0.004	0.004
Total	0.14	0.12	0.13	0.06	0.05	0.06

Source: Compiled from NACO and Census data

The above table reveals that only registered cases HIV prevalence of Karnataka state is around more than doubled than national average.

Table No: 6. 8 Mapping of High Risk Groups of AIDs in India and Karnataka in 2004

High Risk Groups of AIDS	All India		Karnataka		Per sites			
	Sites	Sizes	Sites	Sizes	India	%	Karnataka	%
FSWs	6795	292058	703	9859	43	4	14	4
IDUs	2194	95767	28	703	44	4	25	8
MSM	1389	86721	89	705	62	5	8	3
Migrant Workers	3908	1707122	209	28760	437	38	138	45
Truckers	4476	2090106	180	17542	467	41	97	32
Street Children	1514	95254	197	3569	63	6	18	6
Eunuchs	819	20950	81	557	26	2	7	2
All	21095	4387978	1487	61695	1141		307	

Sources: Lok Sabha Unstarred Question No. 2295, Dated 15.12.2004.

A look at the High Risk Groups of AIDs in India and Karnataka almost all type of risk group's number affected persons per sites of Karnataka state is around the same as Indian scenario.

6.8 HIV/AIDS Scenario in the Districts of Karnataka:

Globally, HIV/AIDS is currently perceived as a developmental issue rather than a mere public health problem. This is because HIV/AIDS affects adults in the reproductive age group thereby changing the demographic structure of the community. Consequently, many African countries have experienced sharp decline in their National Income. HIV/AIDS is also increasingly associated with poverty and is inseparable from issues such as unemployment and migration. Women are especially vulnerable to HIV infection due to biological, social and economic reasons. During the past decade HIV has also not spared children who are increasingly affected and infected by this virus, leading to increase in infant/child mortality and morbidity.

The following table gives us the district wise HIV/AIDS information for all the districts of the state, the highlighted row indicates the scenario of Dharwad district.

Table No: 6. 9 District-wise HIV +ve cases, AIDS cases, Death due to AIDS in KARNATAKA

Sl. No.	Districts	1987 to December 2004		
		HIV +ve	AIDS cases	Death due to AIDS
1	Bangalore (U)	5665	670	73
2	Bangalroe (R)	539	32	7
3	Tumkur	998	55	3
4	Shimoga	844	119	7
5	Chitradurga	655	25	3
6	Davanagere	920	452	38
7	Kolar	831	59	8
8	Mysore	1344	26	8
9	Chamrajnagar	436	3	0
10	Mandya	1176	78	9
11	Mangalore	1675	836	65
12	Udupi	2027	938	35
13	Madikeri	183	6	1
14	Chikmagalur	546	46	5
15	Hassan	762	27	2
16	Belgaum	2130	810	71
17	Bijapur	1853	5	0
18	Bagalkot	3436	20	7
19	Dharwad	3298	317	62
20	Haveri	1033	45	10
21	Gadag	1253	43	3
22	Karwar	711	129	10
23	Gulbarga	1169	24	3
24	Raichur	1210	41	8
25	Bidar	218	2	2
26	Bellary	3200	61	0
27	Koppal	1379	16	2
KARNATAKA TOTAL		**39491**	**4885**	**442**

Table No: 6. 10 Allocation of Funds under National AIDS Control Programme in India and Karnataka

Allocation of Funds under National AIDS Control Programme in India and Karnataka			
Year	Allocation of Funds (Rs. in Lakh)		Karnataka% to India
	Karnataka	India	
2005-06	1930.12	39222.61	4.9
2006-07	3414.45	49691.73	6.9
2007-08	4276.87	67941.9	6.3
Till Nov., 2008	1129.67	24970.73	4.5
Total	10751.11	181826.97	5.9

Source : Calculated from Rajya Sabha Unstarred Question No. 2093, dated 19.12.2008.

Even though HIV prevalence in Karnataka is high and Karnataka occupies sixth place in Indian states, the allocation of funds from NACP is only six percent of total national allocation. It is better NACP should allocate funds proportionately to the states depending on their prevalence.

6.9 Profile of the District:

Our study district Dharwad which is one among the 30 revenue and administrative districts of Karantaka is situated in the western sector of the northern half of the Karnataka State. The district encompasses an area of 4263 sq. kms lying between the latitudinal parallels of 15002' and 15051' North and longitudes 73043' and 75035' East.

Dharwad district comprises five taluks- Dharwad, Hubli, Kalaghatagi, Kundagol, and Navalgund. Based on the agro-climatic conditions, the district can be divided into Malnad, Maidan (dry tract) and the transitional belt. The annual rain-fall in the Malnad tract varies between 838 mm and 939 mm. The transitional belt receives rains less than 777 mm per annum, the lowest being 612 mm. Malenadu is marked by a chain of low hills and valleys with comparatively heavy rainfall. The greater part of this region remains sparsely populated. The Maidan or the black soil plain to the eastern belt is an extensively cultivated area. Cotton, jawar, chilly and wheat are the main crops. The area supports a sizeable population residing in large and compact villages. Households in Malenadu heavily depend on forests and other common lands for their livelihoods.

Table No: 6.11 Dharwad District Health Infrastructure

Infrastructure	Nos
Community Health Centre(s)	6
Primary Health Centre(s)	33
Primary Health Unit(s)	12
A N M Sub centre(s)	144
Blood Banks(s)	2
Operation Theatre(s)	39
Pharmacy	59
No of Private Doctors	395
Medical Officer Quarter(s)	24
A N M Quarter(s)	82

Registered HIV positive Cases, AIDS Cases and AIDS deaths in Dharwad District

Table 6.12: HIV+ Cases, AIDS Cases and AIDS deaths in Dharwad District

Year	HIV +ve	AIDS Cases	Death due to AIDS	Total
1987 to December 2004	3298	317	62	3236
2005	3232		197	3035
2006	3751	462	204	3547
2007	3202		232	2970
2008	2744		156	2588
2009	1309		99	1210
Total HIV+ in Dharwad District(1987 to Jun 2009)				16586

Source: Karnataka Aids Prevention Society Bangalore & District ART centre

This is the data only related to register in the District ART center. Based on the general prevalence rate, estimated People Living with HIV are around 25500.

Karnataka is one of four large south Indian states with a relatively advanced HIV epidemic, with the adult HIV prevalence in several districts exceeding 1% for the past 9 years. India's highest prevalence of HIV/AIDS cases has been observed in the Dharwad district of Karnataka, according to the latest national AIDS statistics, which has estimated the total number of HIV/AIDS patients at 2.47 million (Kalyan Ray 2007). The prevalence in Dharwad is more than that in 13 other high risk districts such as Pune, Chandrapur and Sangli in

Maharashtra and Ukhrul and Churachandpur in Manipur. While these districts have three per cent prevalence of HIV/AIDS among the general population, Dharwad's prevalence rate is six per cent. There are 104 more districts where the prevalence is more than one per cent. For Karnataka, the prevalence has slightly gone up from 1.2 per cent in 2003 to 1.3 per cent in 2006. (http://www.deccanherald.com/Content/Jul72007/scroll20070707011488.asp?section=frontpagenews)

Few Observations:

Globally HIV/AIDS is currently perceived as a developmental issue rather than a mere public health problem. This is because HIV/AIDS affects adults in the reproductive age group thereby changing the demographic structure of the community. Consequently, Karnataka is one of the six HIV/AIDS high prevalence states in India. According to the Karnataka State AIDS Programme (KSAP), the prevalence of infection has been about 20% in the high risk group. The state is estimated to have a 1.5% adult infection rate, with over 5 lakh cases of HIV/AIDS in 2004. There have been 627 deaths reported in relation to HIV/AIDS since 1987. India's highest prevalence of HIV/AIDS cases has been observed in the Dharwad district of Karnataka, the prevalence in Dharwad is more than that in 13 other high risk districts such as Pune, Chandrapur and Sangli in Maharashtra and Ukhrul and Churachandpur in Manipur. While these districts have three per cent prevalence of HIV/AIDS among the general population, Dharwad's prevalence rate is six per cent. Therefore, it is better government should allocate funds proportionately to the districts depending on their prevalence.

Former Prime Minister Atal Bihari Vajapayee had called HIV/AIDS the most serious public health challenge facing India. The cost of this killer disease has been high in terms of human health and lives across the country, disruption of social systems and economics.

India is one of the biggest producers of cheap general ARV drugs that are sold in too many countries all over the world. Ironically, millions of Indians in need of ARV treatment are not receiving it because free-of-charge treatment is available only in selected government institutions in ART centers. It is supposed that the epidemic continues to spread in India.

In the Karnataka state and Dharwad district the number of PLWHIV is increasing and HIV has disturbing impact on infant mortality rate, maternal mortality rate, health and education, livelihoods of the people. Therefore government and NGOs have to take more initiatives to combat this epidemic through creating awareness.

In the next chapter an attempt is made to present the HIV/AIDS matrices using the NASA methodology.

Chapter VII

HIV/AIDS Accounts: A Sub- regional Analysis

In the previous chapter, we saw status of HIV AIDS in Karnataka state and Dharwad district in particular. In this chapter profile of the HIV/AIDS patients and HIV/AIDS Accounts matrices are presented. In this connection 350 HIV/AIDS affected persons have been surveyed in the study district i.e. Dharwad district in the Karnataka state in the Indian union. It may be useful to recall here that as the stigma is attached to the disease the sample selection was based on the information given by the NGOs, Public Facilities and the Private Doctors operating in the domain of HIV/AIDS system. The selection process has been discussed in detail in the chapter relating to the methodology of the study. An attempt is made to present the discussion as indicated below.

1. Profile of HIV/AIDS Patients:
2. Socio-economic Status of the Surveyed HIV/AIDS affected Persons
3. Expenditure Details about HIV AIDS
4. HIV/AIDS Accounts Matrices:

7.1 Profile of HIV/AIDS Patients:

In the following discussion an attempt is made to present the profile of the HIV/AIDS patients who were surveyed as part of the study to elicit the household expenditure on HIV/AIDS. In view of the stigma attached to the disease, it was really difficult to locate the patients. However with the active support and co-operation of the NGOs and a few socially committed Doctors who manage these patients it was possible for us to make a dent into the domain of People Living with HIV/AIDS (PLWHA).

A total of 350 patients were surveyed who were selected randomly and the availability factor as well as accessibility factor played important role in the

selection process. A structured questionnaire was administered to them which sought the information on the following.

Table7.1: HIV / AIDS Services

	Type of HIV/AIDS Services
1	HIV testing
2	Counseling & Psychological Support
3	Counseling & Psychological Support
4	Condom Usage
5	STD Treatment
6	i) Awareness
	ii) Post exposure prophylaxis
	iii) Blood Safety
7	Prevention and treatment of OIs
8	Palliative Care
9	HB Test
10	HB SAG
11	VDRL
12	Sputum
13	CD4 Test
14	Other Clinical
15	Diagnostic Services
16	Antiretroviral Therapy
17	Complementary and alternative medicines

Type of HIV/AIDS Services contd…

18	Complementary and alternative medicines
19	Mitigation activités (ex: Nutrition al Support)
20	Terminal Life Care
21	Support for surviving family and orphans
22	Food Items
23	Clothing
24	Livelihood Support
25	Hostel facilities for orphans
	For Pregnant Women
26	HIV testing during ANC
27	Couple Counseling
28	Post testing Counseling for infant feeding
29	Informed Consent for Nevirapine
30	Nevirapine administration to mother during labor
31	Child Monitoring

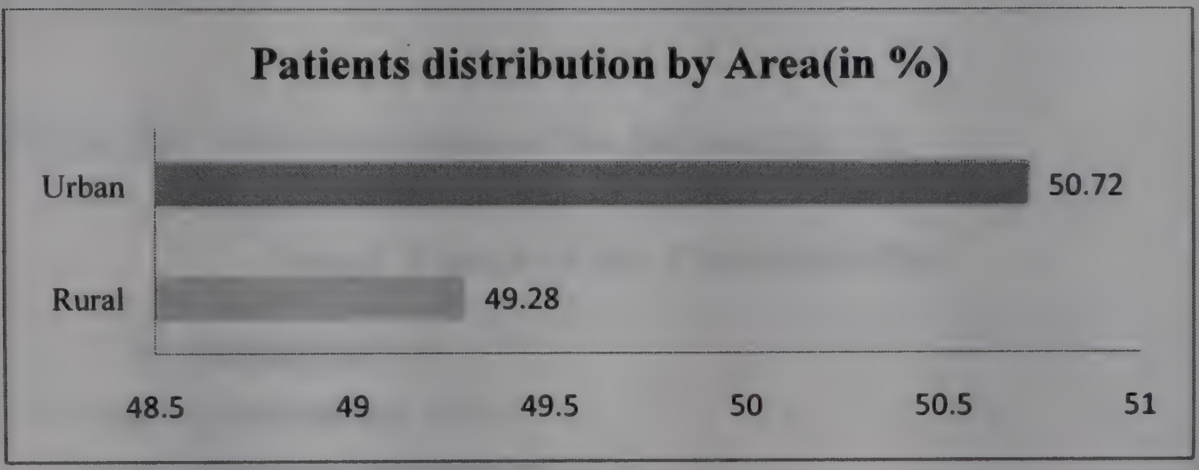
Table7.2: Identification Particulars

HOUSEHOLD PARTICULARS	▪ Religion of the household ▪ Social group of the household ▪ Type of family ▪ Family size ▪ Domicile status of Household ▪ Below Poverty Line (BPL) status
DETAILS ABOUT PATIENT	▪ Occupational status ▪ Educational status ▪ Any other members in the family suffering from AIDS

7.2 Socio-economic Status of the Surveyed HIV/AIDS affected Persons:

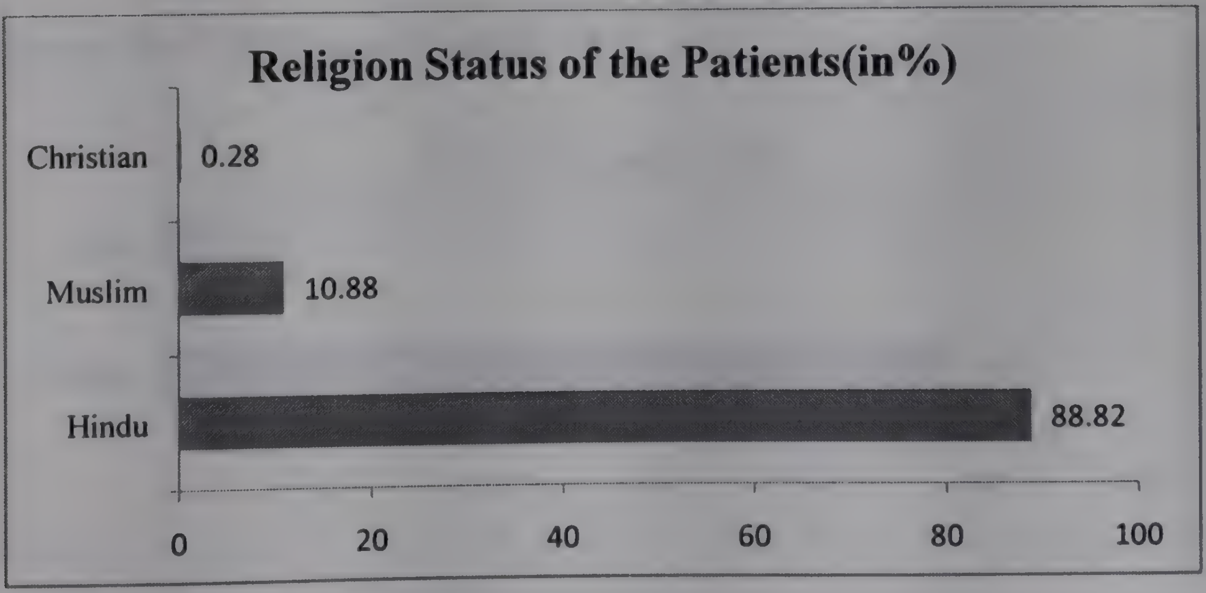
The patients have been studied around 50:50 from urban and rural areas in the district of Dharwad. This helps to study spending behavior of the patients belonging to different areas. The below graph reflected distribution of patients by area.

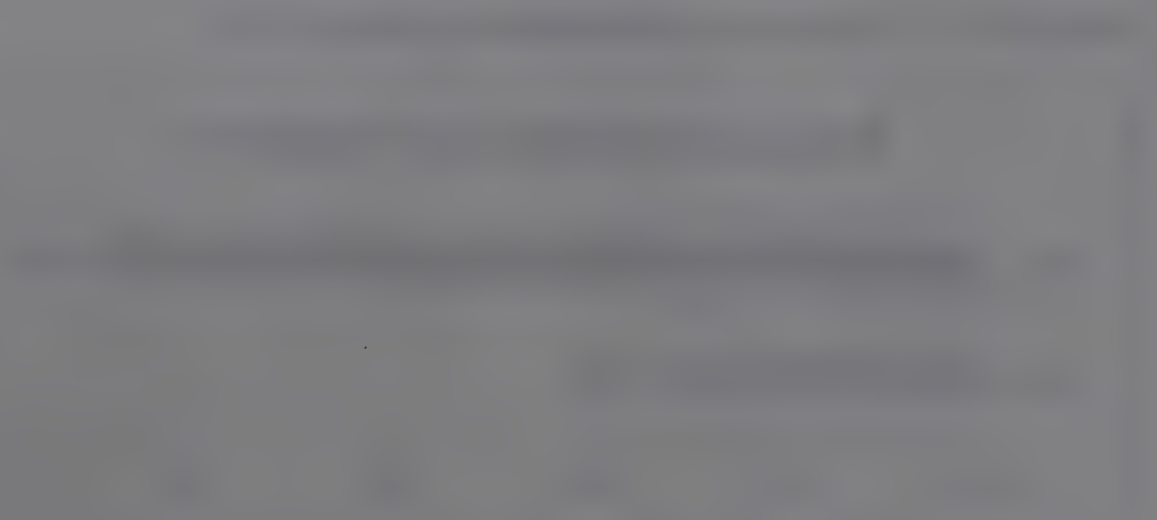
Graph No: 7.1 Patients distribution by Area (in %)



A look at the religious background of the patients reveals that majority of them were Hindus (88.82) and the rest belonged to the Muslim (10.88) and Christian (0.28) community. This may be obvious due to the fact that the Hindus are the majority population in the district of Dharwad. This is reflected from the graph below.

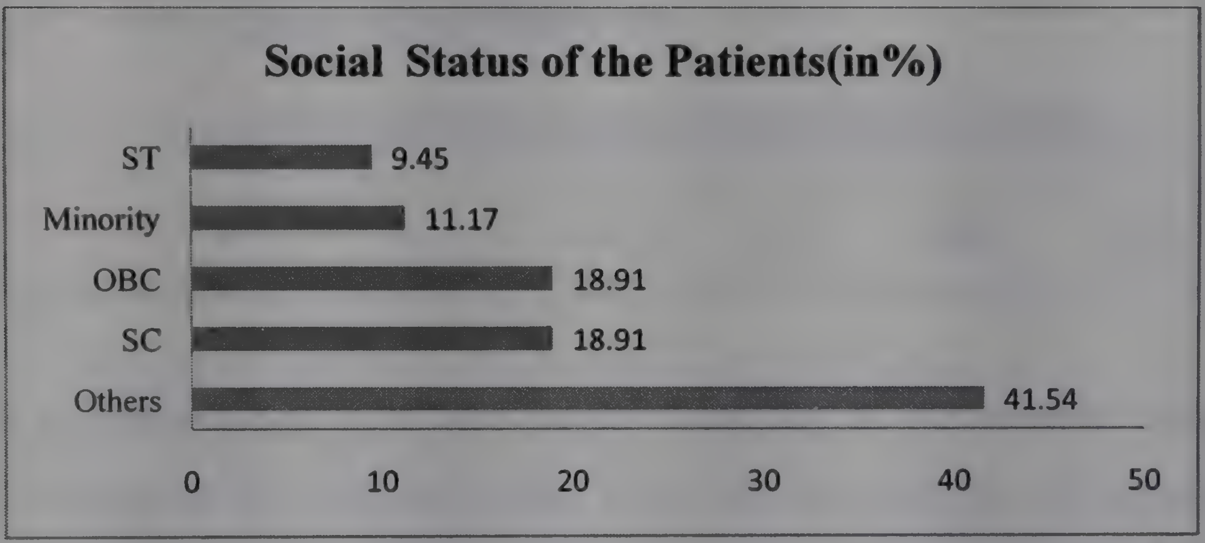
Graph No: 7.2 Religion Status of the Patients (in %)





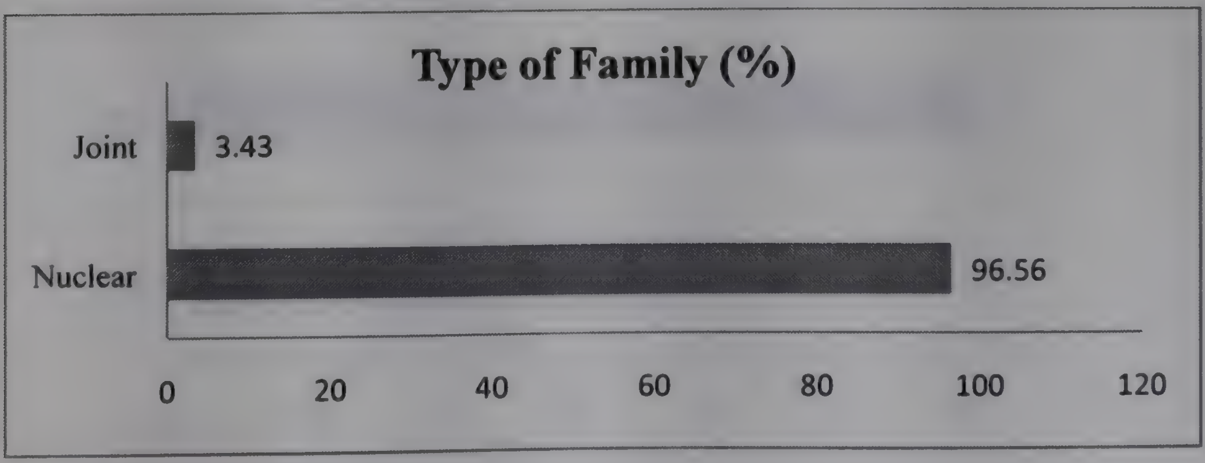
A look at the patients from the socially backward and forward categories shows that 18.91% of the total surveyed HIV/AIDS affected persons belong to Scheduled Castes (SC), 9.45% belonging to Scheduled Tribes (ST), 18.91% belong to Other Backward Communities (OBC) and 11.17% belonging to religious Minority Communities. All these were around 58.46 per cent of the total. General category which consists of forward community accounted for about 41.54 per cent of the patients. This can be observed from the graph below.

Graph No: 7.3 Social Status of the Patients (in %)



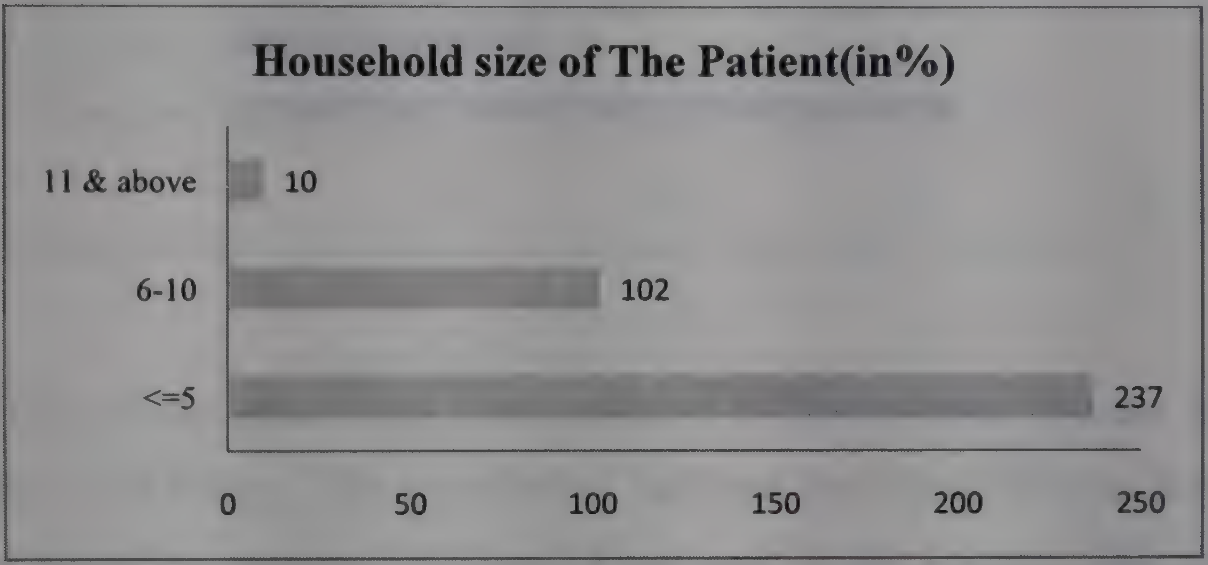
A look at the patients residing type of families reveals that majority of them were residing in the nuclear families. This might allow them to have extra marital relationship compared with people living in joint families.

Graph No: 7.4 Type of Family (%)



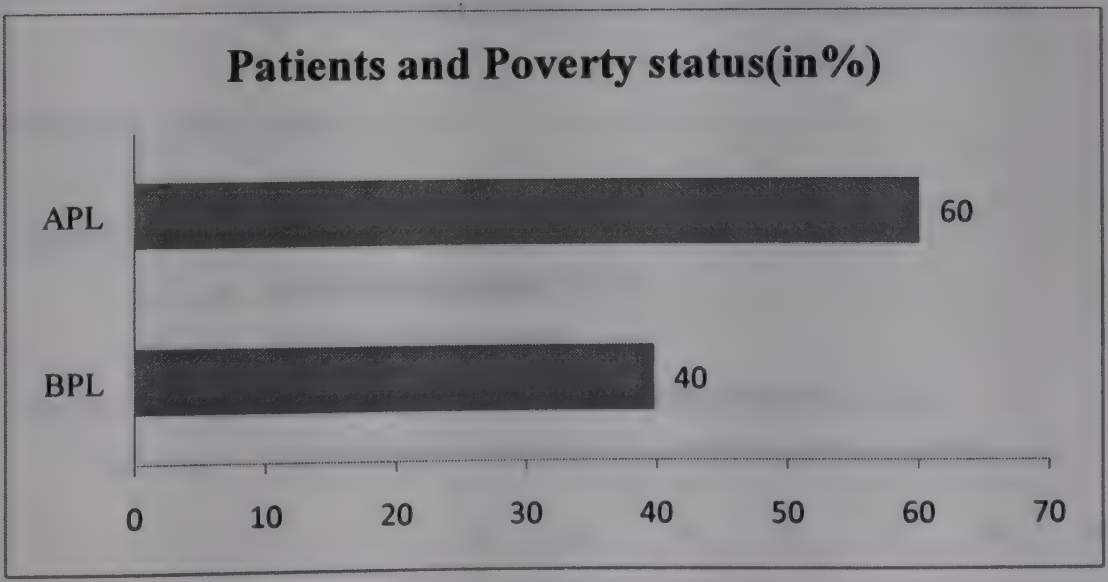
A look at the Size of families of People Living with HIV/AIDS 68 percent from small sized families, remaining from medium and large families. This again shows that persons from big sized families are living with ethical basis.

Graph No: 7.5 Household size of The Patient (in %)

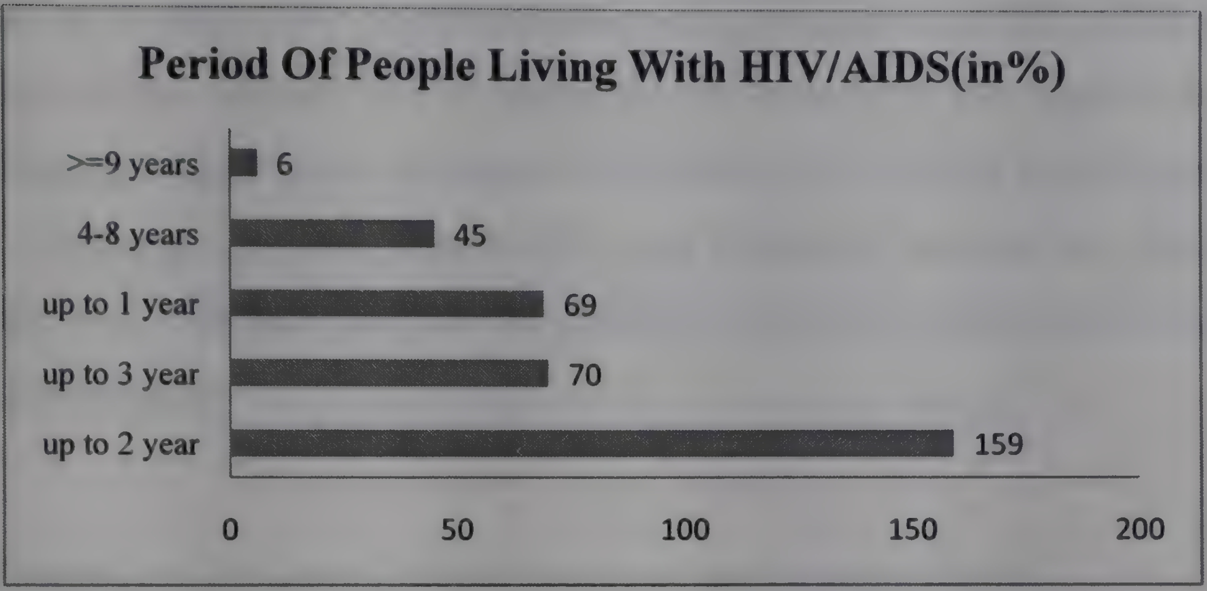


It is interesting to note that people belonging to the poverty category or popularly known as BPL (Below Poverty Line) were less that the rich community as far as incidence / prevalence of the disease is concerned. Poor accounted for about 40 per cent as against the rich which were to the extent of about 60 per cent. This scenario is depicted from the following graph.

Graph No: 7.6 Patients and Poverty status (in %)

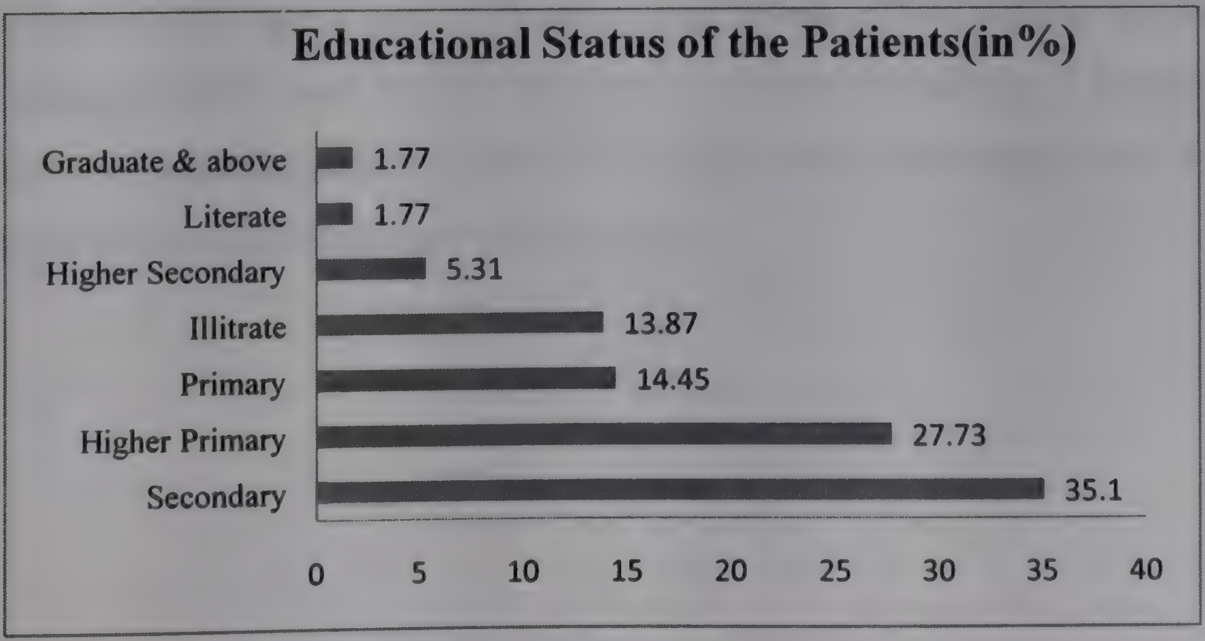


Graph No: 7.7 Period of People Living With HIV/AIDS (in %)



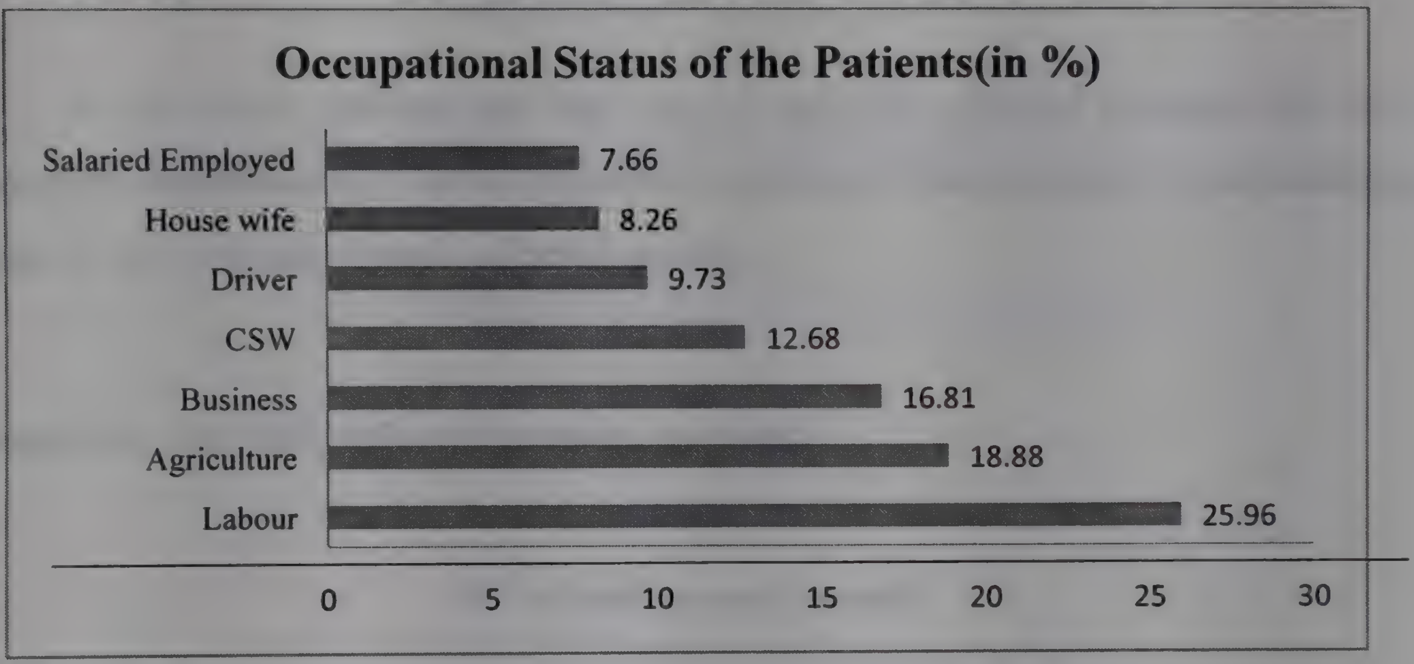
However the educational status seems to be giving some pointers as far as onslaught of the disease. The graph below indicates that those with less than seven years of schooling account for about 58 per cent of the patients. This probably indicates that lack of knowledge and ignorance of the people about disease would act as a factor that would push the people into this death trap. This would also make a case for strong actions on spreading awareness campaigns and making the people know how the disease occurs and how best one can prevent such occurrence.

Graph No: 7.8 Educational Status of the Patients (in %)



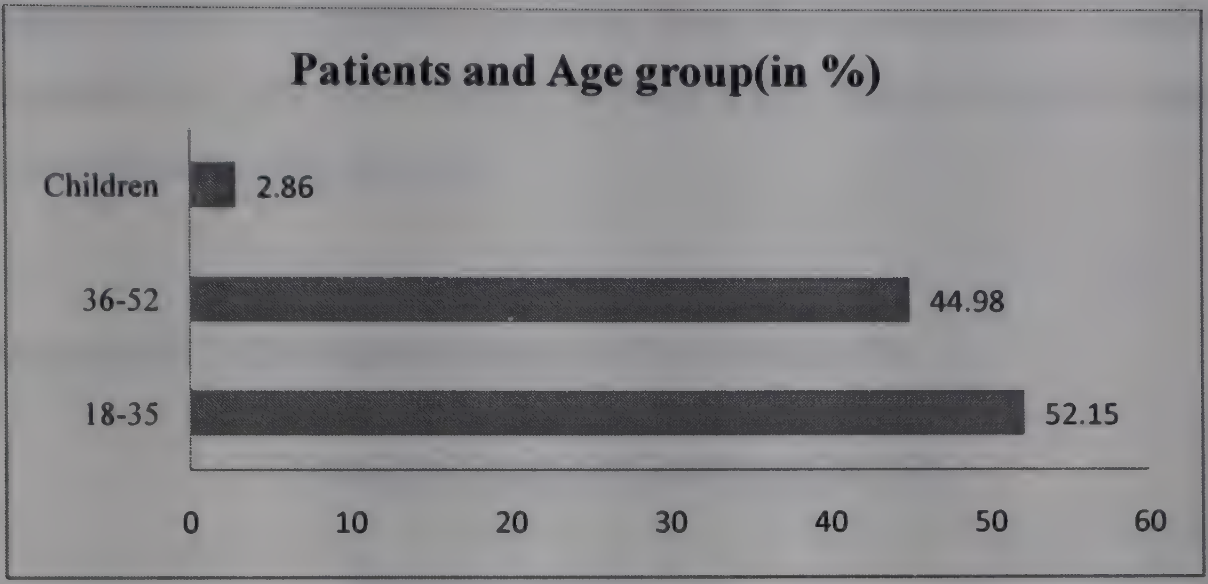
A look at the occupational status of the patients does not provide any clear indication as to what is the relationship between occurrence of HIV/AIDS and the occupation of the patients. For example we can note from the graph below that occupations like Agriculture, Business and Others hover around 10 per cent of the patients. Followed by these, Housewife's and Employed account for about 8 per cent of the total. One can note that the disease has the catchments in all the spheres of economic activity

Graph No: 7.9 Occupational Status of the Patients (in %)



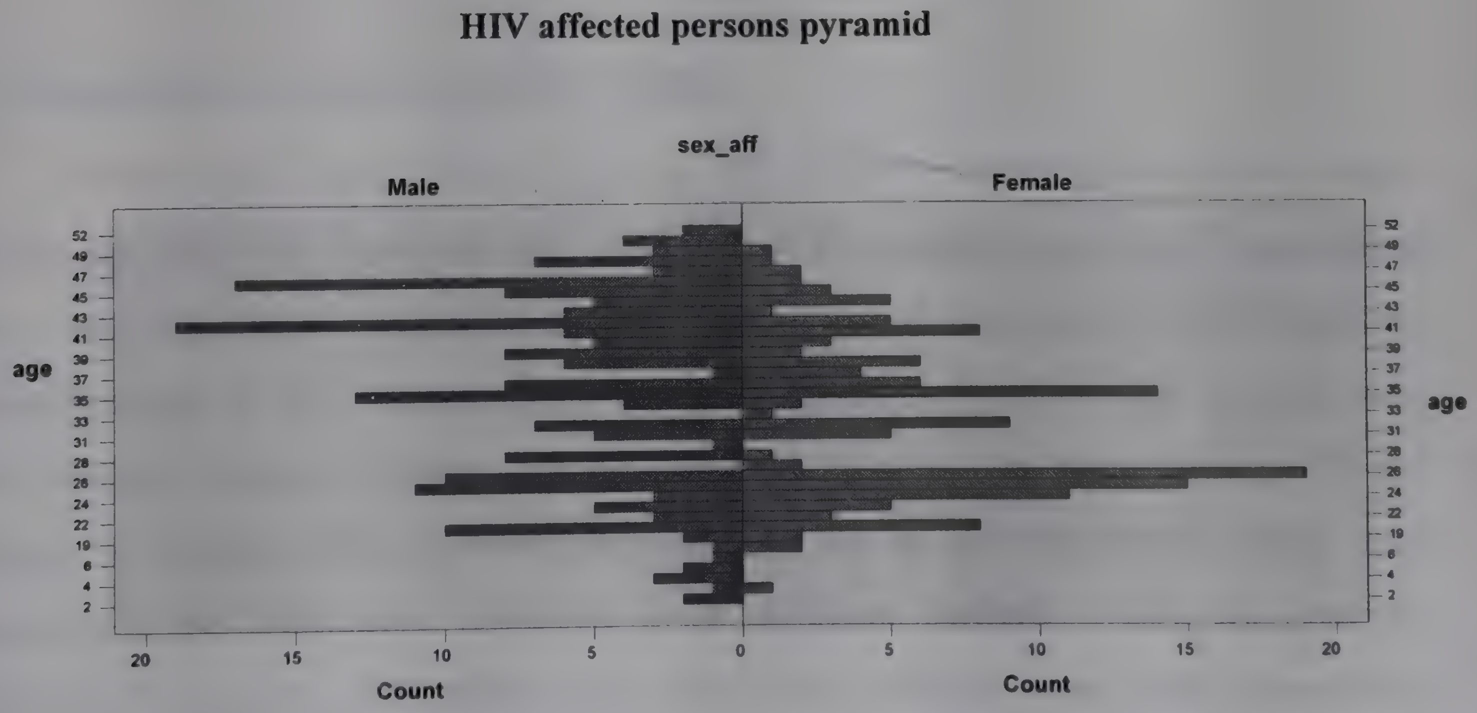
A look at the Age group of People Living with HIV/AIDS 52 percent from the age group of 18-35 and 45 percent from 36-52 and remaining 3 percent is gift from parents to children and this affects working class and through this ultimately affects the economic development of the country.

Graph No: 7.10 Patients and Age group(in %)



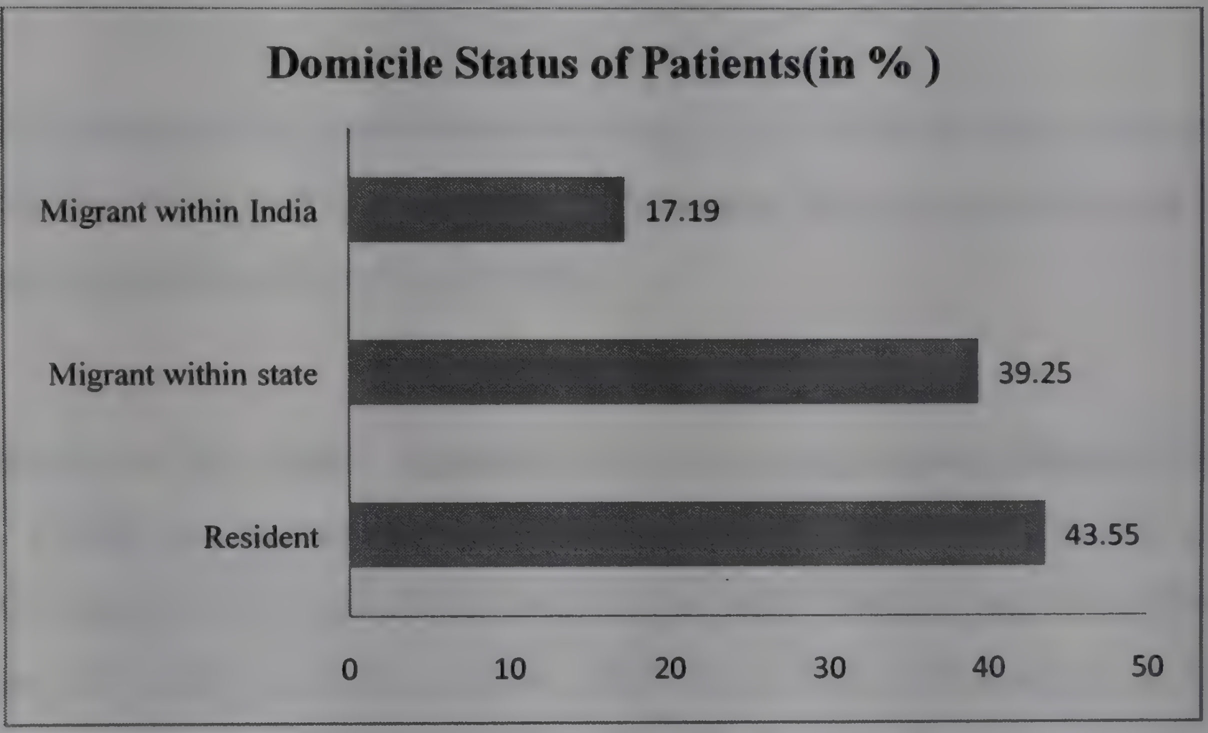
In the below picture age and sex of the HIV affected persons has been presented simultaneously like as population pyramid. One can easily understand age group of the male and female affected persons.

Graph No: 7.11 HIV affected persons pyramid



A look at the Domicile Status of People Living with HIV/AIDS 57 percent from migrant status of families remaining from Resident status of families. This again supported the view that migrant families are at risk and resident families are living with somewhat ethical basis.

Graph No: 7.12 Domicile Status of Patients (in %)



7.3 Expenditure Details about HIV AIDS:

The sample data collected from the HIV/AIDS patients, the NGOs and other public agencies was analyzed and presented in the health accounting format using the NASA standards. The expenditures were grouped according to the functional classifications of the internationally accepted criterion. Similarly the classification for Sources, Agents of funds and Providers of Health Care were arranged in the format of System HIV/AIDS Accounting. As far as the household survey was concerned, the data were collected from different patients. Using the average household expenditure on HIV/AIDS the overall average household expenditure

(which was in fact per patient expenditure) was calculated for the total surveyed households.

Taking this grand average as the basis, the household expenditure was blown up for the district as a whole using the total number of HIV/AIDS patients existing in the district.

With regard to the expenditure incurred by the NGOs the task was easy as we visited all the NGOs and collected the information. Hence the question of blowing up of such expenditure did not arise at all.

As far as the public expenditure is concerned, it was collected from two sources. Firstly, the Karnataka State AIDS Prevention Society (KSAPS) provided data with regard to the expenditure incurred on ART Centers, and other Preventive and other HIV/AIDS related activities. We visited the ART Centers in Dharwad district to collect the public expenditure on HIV/AIDS. Along with this, other official records of the office of the District Health Officer, Dharwad district helped us to quantify the public expenditure incurred for HIV/AIDS within the district.

In the following discussion an attempt is made to present the HIV/AIDS related expenditure pattern which also includes discussion on HIV/AIDS Accounts matrices for the district of Dharwad. At the outset if one considers the overall HIV/AIDS related spend, it can be observed that the total resources flowing towards HIV/AIDS account for about 0.5 per cent of the District Income. This would certainly indicate the meager amount of resources flowing towards the prevention as well as management of the disease in the district. If one looks at the break up of the expenditure by broad sources of funds, it is noteworthy to observe that a significant

burden of the expenditure relating to HIV/AIDS falls on the households who shouldered about 83 per cent of the expenditure. Public and External / NGOs shared about 4 per cent respectively. Thus, the pattern which has evolved indicates as well as supports the findings of the other health financing studies in the Indian context which have shown time and again that it is the household expenditure which has a significant share in the total health expenditure. Such studies have produced evidence that Households account for about 75 to 80 per cent of the total expenditure on health across the states in the Indian union. One may infer from this that the burden has only increased on households as far as expenditure on HIV/AIDS is concerned. The following graphs and tables indicate this pattern as revealed from the study.

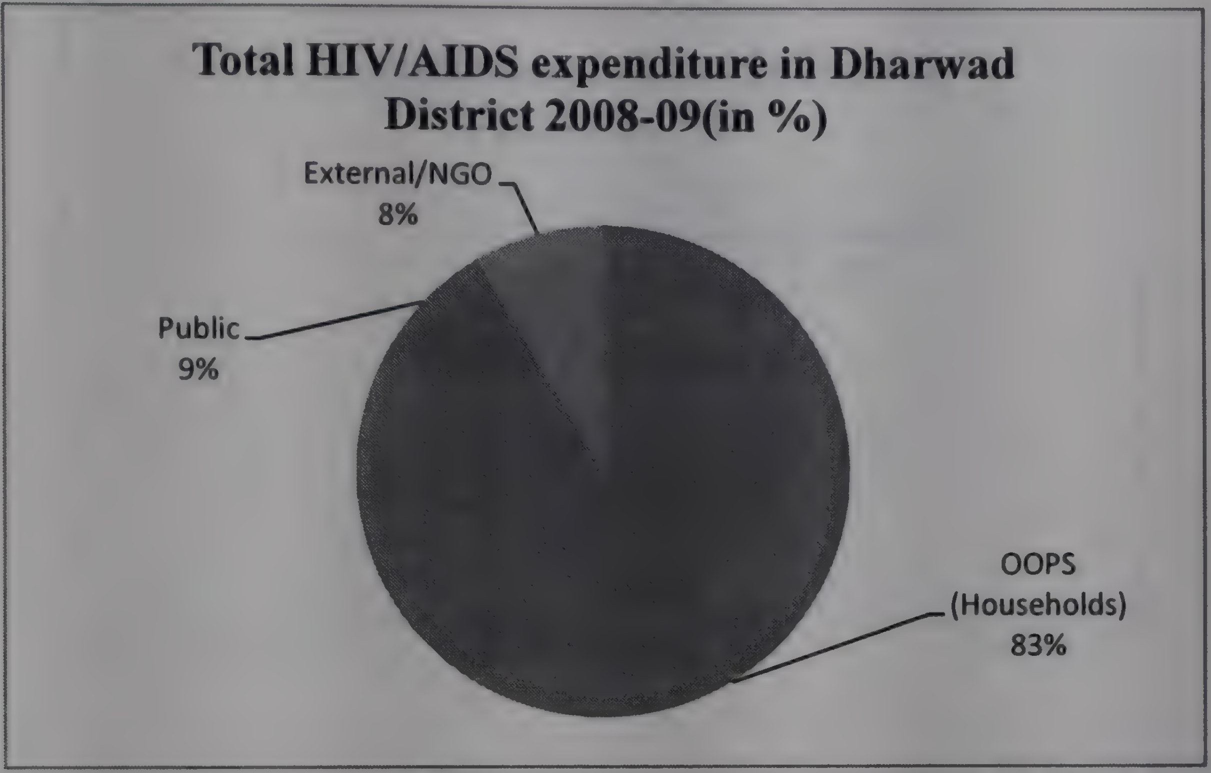
Table 7.3: Total HIV/AIDS expenditure in Dharwad District 2008-09

Expenditure	**INR (Lakhs.)**	**%**
OOPS (Households)	1160	82.62
Public	124	8.83
External/NGO	120	8.55
Total	1404	100

Source: i. Karnataka State AIDS Prevention Society

ii. Karnataka Health Promotion Trust

Graph No: 7.13 Total HIV/AIDS expenditure in Dharwad District 2008-09(in %)

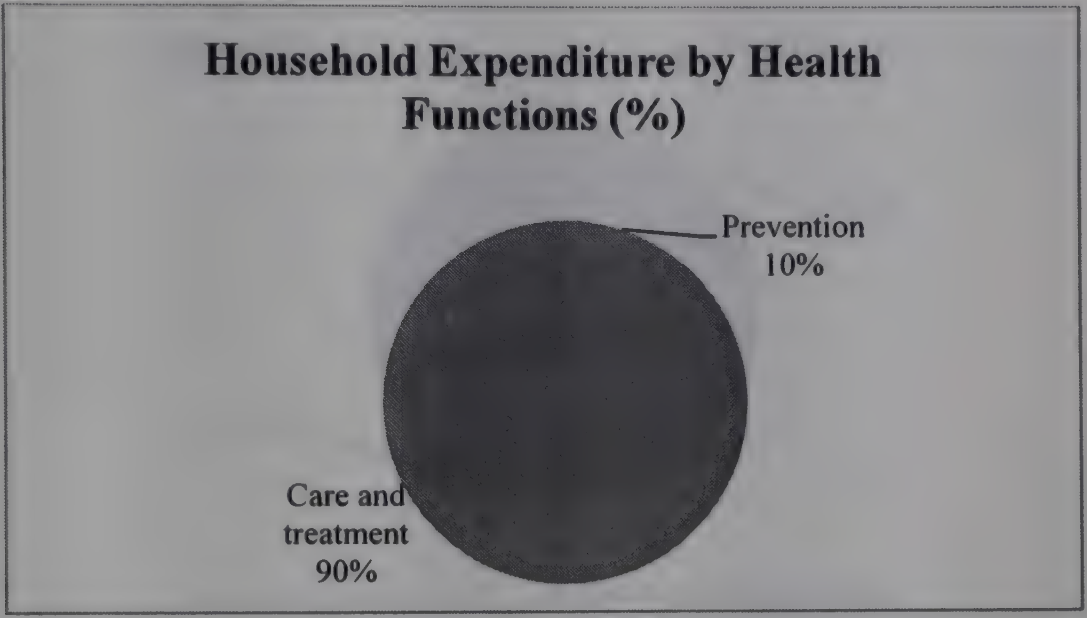


A look at the household expenditure alone for different Health Functions reveals that about 83per cent of the resources go towards care and treatment which is obvious. Households do spend significant proportion of their funds toward managing the disease. About 9 per cent is spent toward preventive measures. The following table and graphs indicate spending pattern from the households.

Table 7.4: Household Expenditure by Health Functions

NASA Code	Functions	INR(Lakhs)	%
ASC.01	Prevention	119.5	10.3
ASC.02	Care and treatment	1040.8	89.7
Total		1160.3	116.03

Graph No: 7.14 Household Expenditure by Health Functions (%)



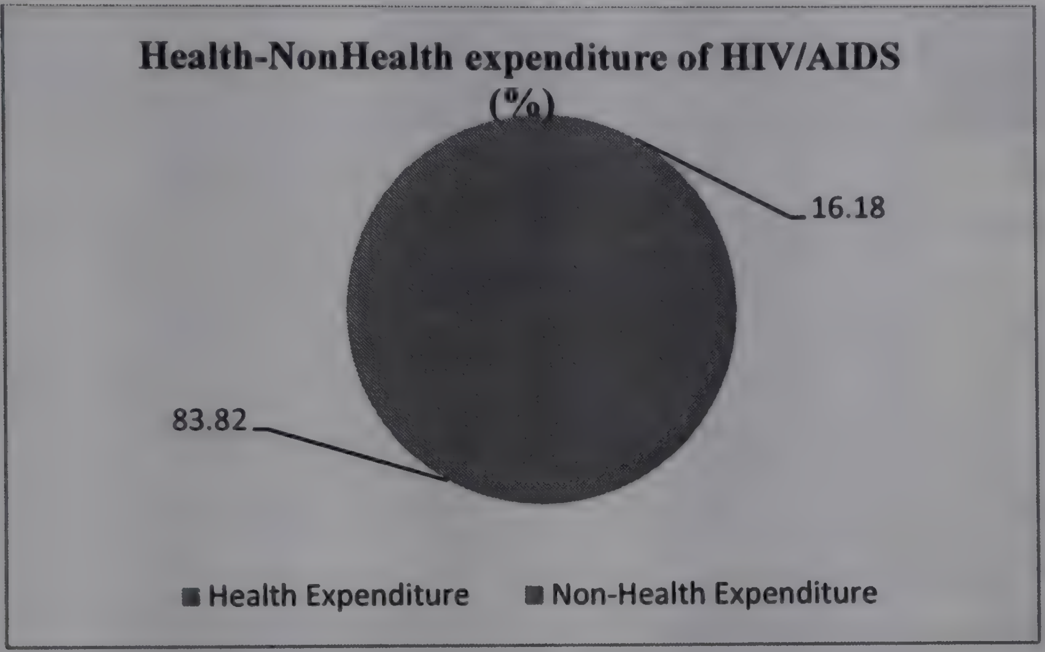
The major issue that has been at the center of discussion as far as HIV/AIDS related expenditures is about the share of Health and Non Health Components in the total. Our analysis shows that within the domain of public and NGO (External) expenditures this argument has come to be true. For example, from the table and chart below one can observe that the non health expenditure accounts for about 90 per cent of the resources while only about 16 per cent of the resources does get utilized for health per se components.

Table No: 7.5 Health-Non Health expenditure of HIV/AIDS

Expenditure (INR Lakhs.)

Expenditure	INR(Lakhs	%
Health Expenditure	39	16.18
Non-Health Expenditure	204	83.82
Total	244	100

Graph No: 7.15 Health-Non Health expenditure of HIV/AIDS (%)



It is quite significant to note that the households utilize private facilities for treatment and management of the disease. For example about 78 per cent of the resources goes to the Private dispensing chemists who only indicate that public provision of medicines and drugs is very scanty and do not reach the affected population. Households devote about 9 per cent of the money to the private pathological laboratories. Private dispensaries and clinics consume 6 per cent of the resources. On the whole private facilities account for about 92 per cent of the household expenditure. This probably indicates lack of response on the part of the public chain of facilities in providing necessary support and provision of services to the HIV/AIDS patients.

Table No:7.6 Household Expenditure by Provider, Dharwad District 2008-09

NASA Code	Providers	INR(Lakhs)	%
PS.01.01.01	State Govt. Teaching Hospitals	2.1	0.18
PS.02.02.01	General hospitals (Allo.) Private for profit	1.7	0.15
PS.02.02.01.01	Private Nursing Care facilities (e.g. Maternity Home)	6.6	0.57
PS.02.02.01.02	Private Dispensaries and clinics (Allo.)	68.2	5.88
PS.02.02.09	Private Dispensaries and Clinics (ISM & H)	8.5	0.73
PS.02.01.02.05	Private Clinical laboratories	110.4	9.51
PS.02.01.02.05.01	Private Diagnostic imaging (lab facilities, STD laboratories, VCTCs)	12.3	1.06
PF.01.02.01.02	Private Dispensing chemists (Allo.)	907.1	78.18
PF.01.02.01.02.01	Private Dispensing Chemists (ISM & H)	43.4	3.74
Total		1160.3	100.00

7.4 HIV/AIDS Accounts Matrices:

The summary table of HIV/AIDS expenditure by Financing Source and Health Care Functions reveals that most of the money that originates for HIV/AIDS gets spent on the Care and Treatment category which accounts for about 84 per cent. In all about 140.4 millions of Indian Rupees were spent in the district. Then next important category of Prevention consumes about 8 per cent of the resources. The

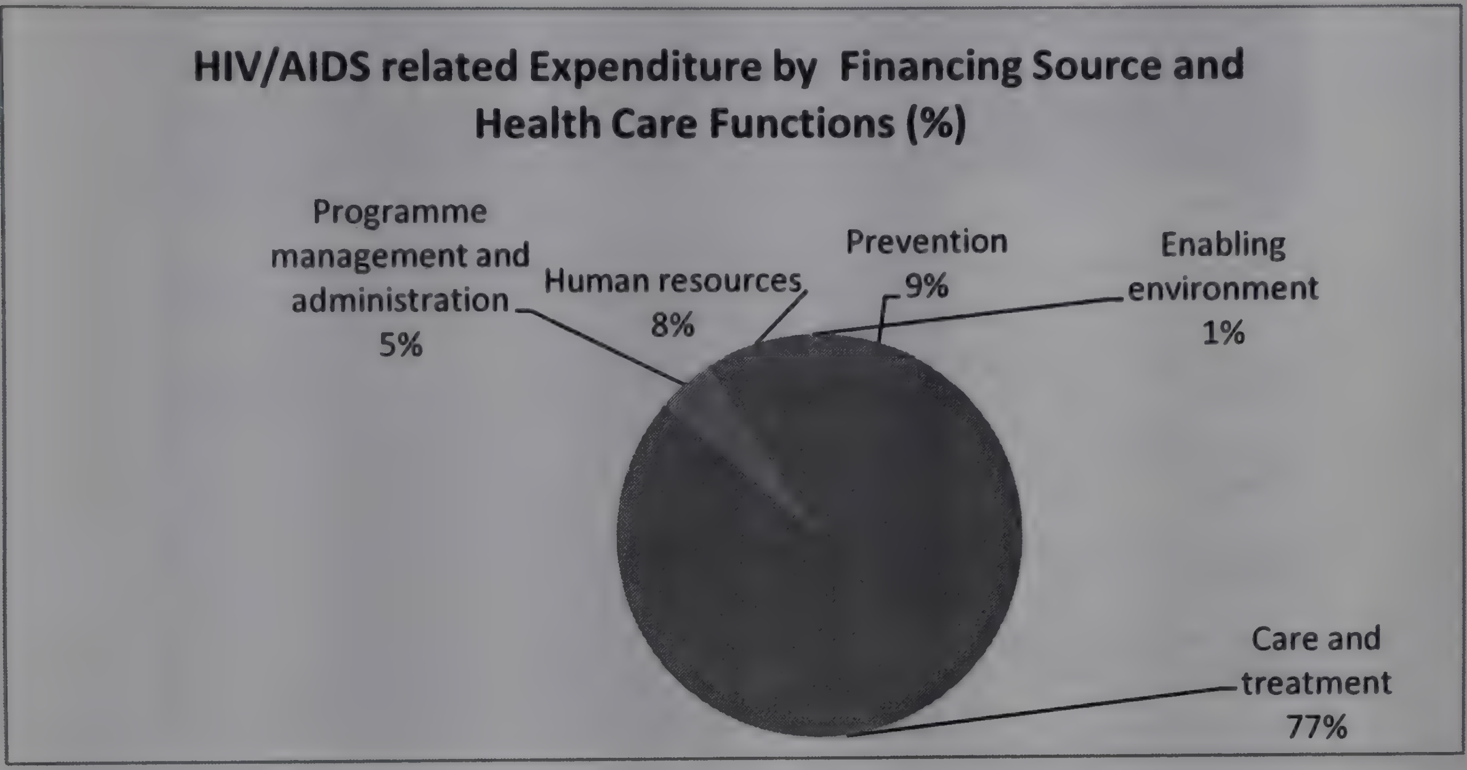
expenditure pattern reveals that the need is felt to strengthen program management, human resources and creating an enabling environment for the effective control of the disease. The following table and graphs reveal this picture.

Table 7.7 : HIV/AIDS related Expenditure by Financing Source and Health Care Functions (INR Lakhs)

Aids Spending Category:	Description	Financing Source			Total	%
		H & FW Dept	HHs OOPS	External/ NGO Sector		
		FS.01.01.02	FS.02.02	FS.02.03		
ASC.01	Prevention	2.6	119.5	12.5	134.6	9.58
ASC.02	Care and treatment	35.7	1040.8	0	1076.5	76.62
ASC.04	Programme management and administration	0	0	65.6	65.6	4.67
ASC.05	Human resources	85.9	0	30.8	116.7	8.31
ASC.07	Enabling environment	0	0	11.6	11.6	0.83
Total		124.2	1160.3	120.5	1405	100

Source: Karnataka State AIDS Preventation Society Karnataka Health Promotion Trust study Survey

Graph No: 7.16 HIV/AIDS related Expenditure by Financing Source and Health Care Functions (%)



If one looks at the public expenditure alone on HIV/AIDS in the district we need to take into account the expenditure by KASAPS which provides services through public ART centers and VCTCs. As usual the salary component in the public domain consumes significant proportion of the resources which accounts for about 65 per cent. Followed by this is fortunately the expenditure head for ART and Other Medicines which got 28 per cent of the resources. Crucial elements like training and STI clinics received scanty resources. The following table gives the HIV/AIDS related public expenditure in the district.

Table 7.8 : HIV/AIDS related expenditures by KSAPS for Dharwad district for the year 2008-09

NASA Code	Components	INR (Lakhs)	%
ASC.05.01	Salary	81	65.07
ASC.01.99	Contingency, A & DA	2	1.57
ASC.05.03	Training	5	4.13
ASC.01.04.03	STI clinics	1	0.48
ASC.02.01.03	ART & Other Medicines	36	28.75
Total		124	100

Similarly, the other entity which injects resources into the domain of HIV/AIDS is the NGO sector. Here again the component on Program Expenses (which basically includes salaries) received 28 per cent of the resources and stood first among the list. Outreach and communication activities received about 25 per cent of the resources. It is important to notice that capital expenditure accounted for about 14 per cent and one needs to dig the issue further and see whether it was meant for HIV/AIDS related activities per se or the NGOs got their own premises and buildings out of such expenditure. Other important functions received meager resources which are depicted in the table below.

Table 7.9: HIV/AIDS related expenditures by NGOs for Dharwad district for the year 2008-09

ASC Code	Functions	INR(Lakhs)	%
ASC.01.01.98	Community Mobilization	8.6	7.11
ASC.01.08.03	STI	0.8	0.64
ASC.01.12	Services (clinical services + flavored condoms)	3.2	2.62
ASC.04	Management cost	5.1	4.24
ASC.04.01	Programme Expenses	34.9	28.93
ASC.04.02	Administration	17.1	14.18
ASC.04.03	Monitoring & Evaluation	3.6	3
ASC.04.10	Capital	4.9	4.07
ASC.05	Outreach and Communication Activities:	30.8	25.56
ASC.07.01	Advocacy	4.7	3.89
ASC.07.02.03	Capacity building	6.9	5.75
Total		120.5	100

Source: Karnataka Health Promotion Trust

7.5 HIV/AIDS Matrices:

The first and foremost table that needs to be produced shows the expenditure bifurcated by Financing Sources and Financing Agents in the HIV/AIDS system of the district. One can note from the table that it is the Household expenditure which is the dominant player and shoulders about 82.62 per cent of the burden of such expenditure. Though much is talked about the external sources for HIV/AIDS

related activities, one can note from the table that they account for about 8 per cent of the total resources and similar is case with the public resources as well.

Table 7.10 HIV/AIDS related Expenditure by Source of Finance and Financing Agents

Aids Spending Category:	Financing Agents (FA)	Source			Total
		Public	HHs (Rs)	External/ NGO	
		FS.01.01.01	FS.02.02	FS.02.03	
FA.01.01.01	State Government	8.83	0	0	8.83
FA.02.04	Household (Out of Pocket)	0	82.62	0	82.62
FA.02.05	NGO / External	0	0	8.55	8.55
Total		8.83	82.62	8.55	100

Source: Karnataka State AIDS Prevention Society Karnataka Health Promotion Trust study Survey

A look at the expenditure arranged by the Financing Sources and Health Care Functions shows that Prevention receives about 8 per cent of the resources. Care and treatment got the highest spending with about 84 per cent of the share. Program Management and Administration got about 2 per cent of the resources. Further break up of the resources spent is given in the Appendix Tables.

Few Observations:

Three hundred and fifty HIV/AIDS patients were surveyed as part of the study and message from the profile of the patients reveals that the disease of HIV/AIDS makes no discrimination and treats every one at par. It appears that those that are above the poverty line and socially progressive are more prone to the disease. At the same time education factor seems to be the dominant factor as far as the spread of the disease is concerned. Those who are educated or at least literate would understand the advocacy campaigns and would bring in a change in their life styles and thus would stay away from the deadly disease.

In all about 140.5 millions of Indian Rupees were spent in the district At the outset, if one considers the overall HIV/AIDS related spending, it can be observed that the total resources flowing towards HIV/AIDS account for about 0.5 per cent of the District Income. This would certainly indicate the meager amount of resources flowing towards the prevention as well as management of the disease in the district. If one looks at the break up of the expenditure by broad sources of funds, it is note worthy to observe that a significant burden of the expenditure relating to HIV/AIDS falls on the households who shouldered about 82.62 per cent of the expenditure. Public shared about 8.83 and External / NGOs shared about 8.55 per cent respectively. Thus the pattern which has evolved indicates as well as supports the findings of the other health financing studies in the Indian context which have shown time and again that it is the household expenditure which has a significant share in the total health expenditure. Out of the household expenditure, care and treatment consumes more than 90 per cent of the total.

The major issue that has been at the center of discussion as far as HIV/AIDS related expenditures is about the share of Health and Non Health Components in the total. Our analysis shows that within the domain of public and NGO (External)

expenditures observations have come to be true. For example, the non health expenditure accounts for about 83 per cent of the resources while only about 16 per cent of the resources get utilized for health per se components.

As far as the total spending is concerned, the NGO (External Sector) and the Public appear to be marginal players. Hence the need is felt to enlarge the resource envelop of the public expenditure and also to enhance and strengthen the network of facilities for the effective prevention and management of the disease. A look at the expenditure arranged by the Financing Sources and Health Care Functions shows that Prevention receives about 8 per cent of the resources. Care and treatment got the highest spending with about 84 per cent of the share.

The present exercise needs to be considered as a modest exercise in HIV/AIDS Accounting in the Indian context. It has tried to set the ball rolling. Now the steps need to be taken further from the district to the state and ultimately to the national level. Thus, the exercise at the macro levels would certainly throw light on policy corrective measure

In the next chapter and attempt is made to present the discussion relating to Out of Pocket Spending (OOPS) on HIV/AIDS.

CHAPTER VIII

Estimating the Out of Pocket Spending (OOPS) to HIV/AIDS: A District Level Analysis

Many Studies have revealed that Out-of-pocket (OOP) expenditure is significantly higher in case of health expenditure. And this, higher proportion of Out-of-pocket (OOP) expenditure has adverse impact on the poor households. In this chapter a modest attempt has been made to estimate the magnitude of HIV / AIDS specific out of pocket expenditure and its impact on livelihoods of households especially poor

Discussion is presented in the following fashion.

1. Introduction
2. Out of Pocket Spending (OOPS) to HIV/AIDS: View from Other Studies
3. HIV/AIDS Expenditure of Households by Type
4. Health and Non Health Expenditure of HIV/AIDS by Households
5. Share of Out of Pocket Spending (OOPS) to total Expenditure to HIV/AIDS
6. Expenditure on HIV/AIDS by HIV/AIDS Affected Households
7. Household Expenditure by Service Provider:
8. Sources of OOPS to HIV/AIDS
9. Few Observations

8.1 Introduction:

Government has been spending significant amounts of its resources for the provision of Preventive and Curative Care services and managing the deadly disease HIV/AIDS. But due to inefficient and insufficient public health services the households are forced to depend on the private health services. The dependence on private facilities increases the cost of treatment. In India, health care financing is predominantly based on out-of-pocket (OOP) payments mainly because of insufficient prepayment mechanisms like insurance. It is evident that health care expenditures drive households in to poverty. In case of HIV/AIDS, patient households are mainly belonging to labor class who move out to different places frequently. The studies also show that the quantum of health expenditure is higher in case of HIV/AIDS affected households. NCAER-UNDP-NACO (2006) study shows that about 20 per cent of non- food spending of HIV households goes into medical expenditure as against 5 percent of non-HIV households. In such a context, estimating HIV/AIDS specific OOPS would help health sector managers to get a clear idea about the quantum of OOPS and its impact affected households.

8.2 Out of Pocket Spending (OOPS) to HIV/AIDS: View from Other Studies

There are few studies that have previously been undertaken to estimate the amounts spent on HIV/AIDS-related activities. Some focused only on expenditures incurred by the public sector, whereas others provided more information on sources and uses of funds for HIV/AIDS. In the early 1990s, two studies sought to estimate expenditures on HIV/AIDS in Asia – one in Thailand for 1991-92 (Viravaidya, Obremsky and Myers 1993), and the other in Sri Lanka for 1993 (Bloom *et al.* 1997). The Thailand study highlighted HIV/AIDS expenditures by various *ultimate* sources of funds – the government, donors and the private sector. The authors also tried to estimate expenditures incurred on treatment, using estimates based on costs for a limited sample of AIDS patients in two provincial and two central hospitals. Many health care providers (e.g.,

traditional providers) are excluded from their analysis and it is not clear, what proportion of the estimated expenditures in their study was an out-of pocket payment by households, and what proportion was paid by other agencies.

The study for Sri Lanka considered expenditures incurred by the government, nongovernmental organizations and international donor agencies. Data for this study were obtained from government records, Sri Lanka's national AIDS control agency, and from international donor groups. The study suffered from many of the coverage inadequacies identified above for Thailand. For instance, it did not include any estimate of household expenditures on prevention and treatment. The second study for Thailand (Pothisiri *et al.* 1999) presents data on public expenditures that are directly related to HIV/AIDS. It also failed to include expenditures made by HIV/AIDS patients.

The Harvard School of Public Health undertook a study on behalf of UNAIDS to track the level and flow of national and international resources to HIV/AIDS related activities in developing countries during 1996 and 1997 (Ernberg *et al.* 1999). It relied mainly on 7 mailed questionnaires to collect information on HIV/AIDS expenditures from 64 developing countries and transition economies of Eastern Europe, and provided information only on funds provided by government and donor agencies, while data on expenditure by households, employers and NGOs, and the entire private sector, were not captured by the study.

Shepard and others undertook a five-country study of the sources and uses of health expenditures linked to AIDS – in Brazil, Cote d'Ivoire, Mexico, Tanzania and Thailand, respectively (Shepard *et al.* 1998; Kone *et al.* 1998; Izazola *et al.* 1998; Lunes *et al.* 1998; Tibendebage *et al.* 1998; Kongsin *et al.* 1998). These studies used a variety of sources (e.g., official documents, expert assessments, household health surveys) to bring together estimates on sources of funds by public, private and international sources, and uses – by prevention and treatment. For example, expert assessments were used to estimate the health care utilization patterns of AIDS patients and per-case costs of treatment of AIDS,

which were then multiplied by the estimated number of AIDS cases to obtain total treatment costs.

SIDALAC (Regional AIDS Initiative for Latin America and the Caribbean) has served as a supporting body for a number of HIV/AIDS expenditure studies based on the NHA framework (Izazola 2000; SIDALAC 1999). Studies for Brazil, Guatemala, Mexico and Uruguay have been completed as part of this work thus far. These studies do touch upon the household expenditure on HIV/AIDS.

Barnett *et al.* (2001) used a methodology similar to the one for Latin America and adapted it to the case of Rwanda to construct HIV/AIDS accounts based on the (National Health Accounts) NHA approach. This study identified three HIV/AIDS-related activities, namely those relating to *prevention and promotion*, such as raising awareness, effecting behavior change and promoting safe sex campaigns; *management*, such as palliative care, surveillance, blood screening and family support; and *treatment,* including hospital and clinic expenditures, counseling and alternative/traditional therapies. It also considered the expenditure by households on HIV/AIDS.

In sum different researchers have tried to understand different facets of private expenditure on HIV/AIDS. The present study also tried to sketch the OOPS on HIV/AIDS with an intention to further decompose such expenditure into various aspects which would throw light on the burden of such spending on households as well.

8.3. HIV/AIDS Expenditure of Households by Type:

Due to social stigma many households are forced to depend on private health services therefore they have to pay more money from their own pocket (either from income, savings, borrowings, or distress sale of assets etc.) this has *adverse impact on the poor households. From the study findings,* quantum and direction of OOPS and its impact on affected households is explained below.

Table 8.1 reveals that on average households spend 89.7 per cent on care and treatment and remaining 10.3 per cent on preventive care. Usually households spend more money on care and treatment and they presume that prevention is government responsibility.

Table 8.1: HIV/AIDS Expenditure of Households by Type

Expenditure	Amount (Rs. In Lakhs)	%
Prevention	119.5	10.3
Care and treatment	1040.8	89.7
Total	1160.3	116.03

8.4. Health and Non Health Expenditure of HIV/AIDS by Households: The table below shows health and non-health expenditures incurred by the households. It shows that households spend 81.26 per cent of expenses on health and 18.74 per cent on non-health expenses.

Table 8.2: Health and Non Health Per Capita Expenditure of HIV/AIDS by Households (Rs in Lakhs)

Expenditure	Amount in Rs	%
Health Expenditure	6995.72	81.26
Non-Health Expenditure	1613.40	18.74
Total	8609.12	100.00

Source: Surveyed data

The various components of non-health expenses and amount spent are provided in the below table.

Table 8.3: Non-Health expenditure by Households

Components	Amount(Rs)	%
Patient travel	1142.91	70.84
Patient accommodation	25.33	1.57
Attendants travel	420.32	26.05
Attendants accommodation	24.84	1.54
Total	1613.40	100.00

8.5. Share of Out of Pocket Spending (OOPS) to total Expenditure to HIV/AIDS:

Here total expenditure on HIV/AIDS in Dharwad has been estimated by adding the expenses incurred by the Public and NGOs to the household expenditures. Below table shows total HIV/AIDS expenditure incurred in Dharwad district. It can be noted that about 83 per cent of the expenses are incurred by the households through OOPS, public providers spend 8.83 per cent and NGOs spend 8.55 per cent of the total expenses.

Table8.4: Total HIV/AIDS expenditure in Dharwad District

2008-09

Expenditure	Amount (Rs. In Lakhs)	%
OOPS (Households)	1160	82.62
Public	124	8.83
External/NGO	120	8.55
Total	1404	100

Source: 1. Karnataka State AIDS Prevention Society

2. Karnataka Health Promotion Trust

3. Primary Data

8.6. Expenditure on HIV/AIDS by HIV/AIDS Affected Households:

Table 8.5 shows details of expenditure incurred by the households by OOPS. The table shows that on average households spend Rs. 6996 per year on care and treatment expenditure. These households spent large amount of money on Antiretroviral Therapy & Other Medicines (Rs. 5135), STD Treatment (Rs. 585), CD4 Test (Rs. 337) and on Complementary and alternative medicines (Rs. 213). The public health facilities provide these facilities at free of cost to the affected persons but due to social stigma they prefer to visit private health providers. Many times these households don't believe the quality of service and medicines provided by the public providers. If we look at the expenses incurred on the preventive expenses we find that the households spend very less amount of money i.e. condom usage (Rs. 109), Prevention and treatment of OIs (Rs. 88) and Nevirapine administration to mother during labour (Rs. 19).

Table 8.5: Care and Treatment Expenditure of HIV/AIDS Affected Households in Dharwad District Dharwad District-2008-09

Type of Expenditure	Total Expenditure (Rs in Lakhs)	Per Capita Expenditure (Rs)	Percentage to Total
Counseling & Psychological Support	0.91	5.49	0.078
Condom Usage	18.13	109.32	1.563
STD Treatment	96.96	584.62	8.356
Prevention of onward transmission	0.02	0.12	0.002
Nevirapine administration to mother during labour	3.09	18.63	0.266
Couple Counseling	0.19	1.15	0.016
Post testing Counseling for infant feeding	0.19	1.15	0.016
Prevention and treatment of OIs	14.55	87.73	1.254
Antiretroviral Therapy & Other Medicines	851.5	5134.16	73.386
Terminal Life Care	1.76	10.61	0.152
Child Monitoring	4.09	24.66	0.352
HIV testing	35.4	213.45	3.051
HIV testing during ANC	2.76	16.64	0.238
HB Test	2.57	15.5	0.221
HB SAG	2.95	17.79	0.254
VDRL	2.99	18.03	0.258
Sputum	2.95	17.79	0.254
CD4 Test	55.89	336.99	4.817
Other clinical Tests	0.94	5.67	0.081
Diagnostic Services	8.67	52.28	0.747
Complementary and alternative medicines	53.79	324.33	4.636
Total	**1160.31**	**6996.14**	100.000

Source : Primáry data

8.7. Household Expenditure by Service Provider:

Table 8.6 shows household expenditure by provider during 2008-09. It shows that significant proportion households utilize private facilities for treatment and management of the disease. For example about 78 per cent of the resources go to the Private dispensing chemist who only indicates that public provision of medicines and drugs is very scanty and do not reach the affected

populations. Households devote about 9 per cent of the money to the private pathological laboratories. Private dispensaries and clinics consume 6 per cent of the resources. On the whole private facilities account for about 99 per cent of the household expenditure. This probably indicates lack of response on the part of the public chain of facilities in providing necessary support and provision of services to the HIV/AIDS patients.

Table 8.6: Household Expenditure by Provider, Dharwad District 2008-09

Providers of Health Facility	Expenditure (Rs in Lakhs)	%
State Govt. Teaching Hospitals	2.1	0.18
General hospitals (Allo) Private for profit	1.7	0.15
Private Nursing Care facilities	6.6	0.57
Private Dispensaries and clinics (Allo)	68.2	5.88
Private Dispensaries and Clinics (ISM & H)	8.5	0.73
Private Clinical laboratories	110.4	9.51
Private Diagnostic imaging	12.3	1.06
Private Dispensing chemists (Allo)	907.1	78.18
Private Dispensing Chemists (ISM & H)	43.4	3.74
Total	1160.3	100.00

8.8. Sources of OOPS to HIV/AIDS:

Table 8.7 shows source of OOPS for HIV/AIDS care and treatment. It shows that on an average 50 per cent of households borrow from relatives and friends, 33 per cent spent from out of their own savings, and 10 per cent by their regular income and 3 per cent by institutional lenders and 1.2 depend on money lenders. About 2.3 per cent of households sold their assets or articles to pay for the treatment.

Table No: 8.7 Source of OOPS to HIV/AIDS by Selected Patient Households

Sources of expenditure	BPL	APL	ALL
Out of regular income	9.56	10.33	10.012
Own savings	28.36	36.43	33.087
Borrowings from relatives & friends	51.87	48.74	50.087
Borrowings from institutional lenders	4.41	2.37	3.216
Borrowings from money lenders	1.52	1.08	1.259

8.9. Few Observations:

The study reveals that though HIV/AIDS patients are given treatment at free of cost; the patients depend on private health providers because of social stigma and lack of belief in public services. On an average OOPS on care and treatment is Rs.6996 per year per households in Dharwad district. The patient households spent about 89.7 per cent of this amount on care and treatment and remaining 10.3 per cent on preventive care. The non-health expenditures such as travel and accommodation cost around 19 per cent. Thus the study finds the quantum of OOPS is 83 per cent of the total spending on HIV/AIDS. The higher proportion of OOPS is mainly because of high dependence on private providers. In the selected district about 78 per cent of the resources go to the Private dispensing chemists who only indicate that public provision of medicines and drugs is very scanty and do not reach the affected populations. Households devote about 9 per cent of the money to the private pathological laboratories. On the whole private facilities account for about 99 per cent of the household expenditure. This indicates lack of response on the part of the public chain of facilities in providing necessary support and provision of services to the HIV/AIDS patients.

Chapter IX

Concluding Observations and Suggestions:

Economists have conventionally believed that increased wealth leads to better health; Good deal of debate has been generated with regard to financing of health care services especially in the context of developing countries. Initially studies relating to financing of health services were restricted to public spending alone. Now the focus is on resource flows from all sources to health sector. In this context, health sector accounting is visualized as a tool for efficient governance of the health sector. However, health accounting is still in its infancy stage in India and research in this field is still on the learning curve. In comparison, many developed countries have well-established systems for generating health sector accounts and linking them with institutionalized processes of policy formulation.

HIV/AIDS is a calamity of the new millennium, similar to plague and smallpox that devastated mankind in the Middle Ages. Like leprosy in the bygone centuries, human immunodeficiency virus (HIV) infection is also associated with social stigma. AIDS ranks fourth among the world's top killers of mankind. Tuberculosis, respiratory tract infections, and malaria are among the top three killers. AIDS has killed more than 25 million people since it was first recognized in 1981, making it one of the most destructive epidemics in recorded history (UNAIDS/WHO, 2005).

Globally HIV/AIDS is currently perceived as a developmental issue rather than a mere public health problem. This is because HIV/AIDS affects adults in the reproductive age group thereby changing the demographic structure of the community. Consequently, Karnataka is one of the six HIV/AIDS high prevalence states in India. According to the Karnataka State AIDS Programme (KSAP), the prevalence of infection has been about 20% in the high risk group. The state is estimated to have a 1.5% adult infection rate, with over 5 lakh cases of HIV/AIDS in 2004. There have been 627 deaths reported in relation to

HIV/AIDS since 1987. India's highest prevalence of HIV/AIDS cases has been observed in the Dharwad district of Karnataka, the prevalence in Dharwad is more than that in 13 other high risk districts such as Pune, Chandrapur and Sangli in Maharashtra and Ukhrul and Churachandpur in Manipur. While these districts have three per cent prevalence of HIV/AIDS among the general population, Dharwad's prevalence rate is six per cent. Therefore, it is better government should allocate funds proportionately to the districts depending on their prevalence.

Former Prime Minister Atal Bihari Vajapayee had called HIV/AIDS the most serious public health challenge facing India. The cost of this killer disease has been high in terms of human health and lives across the country, disruption of social systems and economics.

The first person with AIDS in Karnataka was identified in 1988. Since then, there is evidence that the HIV epidemic has reached a substantial portion of the population. Based on an estimated prevalence of 1.5% in the general population (reflecting the prevalence among antenatal women) there are more than 500,000 persons already living with HIV in the state. Lot of resourced both public and private are entering into the HIV/AIDS sector which in the current day context seem to be not quantified especially the private resources.

In this context we also need to quantify the resource flows to HIV/AIDS for control and management of the disease This can be attempted through the methodology of National Health Accounts (NHA).The aim of NHA is to measure the total volume of financial expenditures and present them in such a way that the flows of resources between different units in a health care system are immediately visible to the managers of the health sector. Taking clue from the NHA framework, recently UNAIDS has developed the National AIDS Spending Assessment (NASA) model to develop HIV/AIDS specific Accounts.

Initially few countries tried to quantify the resource flow to HIV/AIDS sector which have produced some lessons relevant fro India. There are eight main sets of studies that have previously been undertaken to estimate the amounts spent on HIV/AIDS-related activities according to NHA methodology. Some focused only on expenditures incurred by the public sector, whereas others provided more information on sources and uses of funds for HIV/AIDS, although falling short of applying the full-fledged NHA method.

Observing the present health condition in Karnataka state this expenditure is significantly lower in terms of per-capita expenditure as well as in comparison to the SDP. On the other hand, health expenditure as a share of total expenditure is also lower. In the reference period health expenditure as a share of total expenditure is between 6 per cent and 11 per cent. In 1990-91 it was 7.8 per cent, which increased to 10.7 percent. Though it seems to be increasing in terms of total public expenditure, with regard to per capita expenditure much ground needs to be covered.

Every disease has its own type of health care functions. Therefore, UNAIDS has developed the NASA framework to get clear picture about track and quantify the resource flows for preventing and managing the deadly disease.

The findings of Countries which have adopted NASA Methodology are useful to inform who will finance what priority activities in the country, and whether the country could ensure the sustainability of the resources in the future by looking at the trends. It would expect that the government would provide increased funds year by year. The information could also be used to overview the transparency of the donor funds, how the fund has been used and the resulted achieved.

The global economic crisis that began in 2008 has been linked to decreased donor spending for the HIV and AIDS epidemic in low- and middle-income countries. In October 2009, UNAIDS released a series of country studies on the impact of the economic crisis on HIV prevention and treatment

programmes. The summary report states "the negative impact of the crisis on HIV and AIDS programmes is real and getting worse." For example, the percentage of countries where antiretroviral treatment programmes were adversely affected by reduced external funding rose from 11% to 21% from July 2008 to July 2009. Prevention programmes were identified as the most likely to be worst affected in all countries receiving external funding. If universal access to HIV prevention, treatment, care and support is to be reached by 2015 - the date provided in the Millennium Development Goals (MDGs) – there needs to be a dramatic increase in the level of funding for HIV and AIDS.

However, donating more money is not enough. Many of the countries where the largest donations are being received are under-resourced and lack the infrastructure to absorb the funding. Higher-level bodies – those at the top of funding chains – need to take a greater responsibility for the actual implementation of money on the ground. There is a great emphasis amongst the international community on raising money for HIV and AIDS, but once that money has been allocated, not enough attention seems to be paid to where it goes.

The President's Emergency Plan for AIDS Relief, also known as PEPFAR, is America's initiative to combat the global HIV/AIDS epidemic and is now part of the Global Health Initiative. Since 2004 PEPFAR has committed more than $30 billion to funding for the AIDS epidemic.1 PEPFAR continues to represent the largest financial commitment by a single country responding to HIV and AIDS worldwide.

India is one of the biggest producers of cheap general ARV drugs that are sold in too many countries all over the world. Ironically, millions of Indians in need of ARV treatment are not receiving it because free-of-charge treatment is available only in selected government institutions in ART centers. It is supposed that the epidemic continues to spread in India.

In the Karnataka state and Dharwad district the number of PLWHIV is increasing and HIV has disturbing impact on infant mortality rate, maternal mortality rate, health and education ,livelihoods of the people. Therefore government and NGOs have to take more initiatives to combat this epidemic through creating awareness.

Three hundred and fifty HIV/AIDS patients were surveyed as part of the study and message from the profile of the patients reveals that the disease of HIV/AIDS makes no discrimination and treats everyone at par. It appears that those that are above the poverty line and socially progressive are more prone to the disease. At the same time education factor seems to be the dominant factor as far as the spread of the disease is concerned. Those who are educated or at least literate would understand the advocacy campaigns and would bring in a change in their life styles and thus would stay away from the deadly disease.

In all about 140.5 millions of Indian Rupees were spent in the district At the outset, if one considers the overall HIV/AIDS related spending, it can be observed that the total resources flowing towards HIV/AIDS account for about 0.5 per cent of the District Income. This would certainly indicate the meager amount of resources flowing towards the prevention as well as management of the disease in the district. If one looks at the break up of the expenditure by broad sources of funds, it is note worthy to observe that a significant burden of the expenditure relating to HIV/AIDS falls on the households who shouldered about 82.62 per cent of the expenditure. Public shared about 8.83 and External / NGOs shared about 8.55 per cent respectively. Thus the pattern which has evolved indicates as well as supports the findings of the other health financing studies in the Indian context which have shown time and again that it is the household expenditure which has a significant share in the total health expenditure. Out of the household expenditure, care and treatment consumes more than 90 per cent of the total.

The major issue that has been at the center of discussion as far as HIV/AIDS related expenditures is about the share of Health and Non Health

Components in the total. Our analysis shows that within the domain of public and NGO (External) expenditures observations have come to be true. For example, the non health expenditure accounts for about 83 per cent of the resources while only about 16 per cent of the resources get utilized for health per se components.

As far as the total spending is concerned, the NGO (External Sector) and the Public appear to be marginal players. Hence the need is felt to enlarge the resource envelop of the public expenditure and also to enhance and strengthen the network of facilities for the effective prevention and management of the disease. A look at the expenditure arranged by the Financing Sources and Health Care Functions shows that Prevention receives about 8 per cent of the resources. Care and treatment got the highest spending with about 84 per cent of the share.

The present exercise needs to be considered as a modest exercise in HIV/AIDS Accounting in the Indian context. It has tried to set the ball rolling. Now the steps need to be taken further from the district to the state and ultimately to the national level. Thus, the exercise at the macro levels would certainly throw light on policy corrective measure

On an average OOPS on care and treatment is Rs.6996 per year per households in Dharwad district. The patient households spent about 89.7 per cent of this amount on care and treatment and remaining 10.3 per cent on preventive care. The non-health expenditures such as travel and accommodation cost around 19 per cent. Thus the study finds the quantum of OOPS is 83 per cent of the total spending on HIV/AIDS. The higher proportion of OOPS is mainly because of high dependence on private providers. In the selected district about 78 per cent of the resources go to the Private dispensing chemists who only indicate that public provision of medicines and drugs is very scanty and do not reach the affected populations. Households devote about 9 per cent of the money to the private pathological laboratories. On the whole private facilities account for about 99 per cent of the household expenditure. This indicates lack of response on the part

of the public chain of facilities in providing necessary support and provision of services to the HIV/AIDS patients.

In sum we can say

- India is experiencing a diverse HIV epidemic that affects states in different ways, and different extents.
- The groups most affected include injecting drug users, sex workers, truck drivers, migrant workers.
- The study reveals that though HIV/AIDS patients are given treatment at free of cost; the patients depend on private health providers
- On an average OOPS on care and treatment is Rs.6996 per year per household in Dharwad district.
- The patient households spent about 89.7 per cent of this amount on care and treatment and remaining 10.3 per cent on preventive care.
- The non-health expenditures such as travel and accommodation cost around 19 per cent. Thus the study finds the quantum of OOPS is 83 per cent of the total spending on HIV/AIDS.
- The higher proportion of OOPS is mainly because of high dependence on private providers.
- In the selected district about 78 per cent of the resources go to the Private dispensing chemists which only indicates that public provision of medicines and drugs is very scanty and do not reach the affected populations.
- On the whole private facilities account for about 99 per cent of the household expenditure.
- This indicates lack of response on the part of the public chain of facilities in providing necessary support and provision of services to the HIV/AIDS patients.
- The need is felt to strengthen and enlarge the public facilities meant for HIV/AIDS
- The ART supply chain needs fine tuning to reach the poor and the needy.

Researchers, policy makers and students in the domain of Health Economics can consider as the first step in estimating resource flows to HIV/AIDS system at the district level. The entities in the NASA framework cannot be easily adopted as well as adapted to the Indian conditions. In this background the need is felt to chalk out our own provider categories as well as functional categories to suit the local needs. Further efforts in this regard can undertake such exercises. Such attempts can be replicated at the state and national levels to understand the financial segment of the HIV/AIDS sector in the Indian context.

The review presented in the initial chapter clearly brings out the experiments in tracking of resources for health in general and HIV/AIDS segment in particular which lie outside the boundaries of India. One can note that such efforts are quite scanty in the Indian context. The present exercise tries to fill this gap by estimating resource flows to HIV/AIDS in a district of India. The focus here is to see whether one can really attempt such a tracking exercise in the background of data problems in the Indian context. The study thus has set the ball rolling for other academicians to take the issue further.

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APPENDIX TABLES

A1 : HIV/AIDS related Expenditure by Financing Source and HIV /AIDS Care Functions (FS x HF) Percentage

Aids Spending Category:	Description	Financing Source			Total
		H & FW Dept	HHs OOPS	External/ NGO Sector	
		FS.01.01.02	FS.02.02	FS.02.03	
ASC.01	**Prevention**	**0.18**	**8.51**	**0.89**	**9.58**
ASC.01.01.98	Community Mobilization	0.00	0.00	0.61	0.61
ASC.01.02	Counseling & Psychological Support	0.00	0.06	0.00	0.06
ASC.01.04.01	Condom Usage	0.00	1.29	0.00	1.29
ASC.01.04.03	STD Treatment	0.04	6.90	0.06	7.00
ASC.01.07	Prevention of onward transmission	0.00	0.00	0.00	0.00
ASC.01.12	Services (clinical services + flavored condoms)	0.00	0.00	0.22	0.22
ASC.01.17	Nevirapine administration to mother during labour	0.00	0.22	0.00	0.22
ASC.01.17.01	Couple Counseling	0.00	0.01	0.00	0.01
ASC.01.17.03	Post testing Counseling for infant feeding	0.00	0.01	0.00	0.01
ASC.01.99	Contingency, TA & DA	0.14	0.00	0.00	0.14
ASC.02	**Care and treatment**	**2.54**	**74.08**	**0.00**	**76.62**
ASC.02.01.02	Prevention and treatment of OIs	0.00	1.04	0.00	1.04
ASC.02.01.03	Antiretroviral Therapy & Other Medicines	2.54	60.61	0.00	63.15
ASC.02.01.03.01	Terminal Life Care	0.00	0.13	0.00	0.13
ASC.02.01.03.02	Child Monitoring	0.00	0.29	0.00	0.29
ASC.02.01.05	HIV testing	0.00	2.52	0.00	2.52
ASC.02.01.05.01	HIV testing during ANC	0.00	0.20	0.00	0.20
ASC.02.01.05.02	HB Test	0.00	0.18	0.00	0.18
ASC.02.01.05.03	HB SAG	0.00	0.21	0.00	0.21
ASC.02.01.05.04	VDRL	0.00	0.21	0.00	0.21
ASC.02.01.05.05	Sputum	0.00	0.21	0.00	0.21

Aids Spending Category:	**Description**	**Financing Source**			**Total**
		H & FW Dept	**HHs** **OOPS**	**External/ NGO Sector**	
		FS.01.01.02	**FS.02.02**	**FS.02.03**	
ASC.02.01.05.06	CD4 Test	0.00	3.98	0.00	3.98
ASC.02.01.05.07	Other clinical Tests	0.00	0.07	0.00	0.07
ASC.02.01.05.08	Diagnostic Services	0.00	0.62	0.00	0.62
ASC.02.01.10	Complementary and alternative medicines	0.00	3.83	0.00	3.83
ASC.04	**Programme management and administration**	**0.00**	**0.00**	**4.67**	**4.67**
ASC.04	Management cost	0.00	0.00	0.36	0.36
ASC.04.01	Programme Expenses	0.00	0.00	2.48	2.48
ASC.04.02	Administration	0.00	0.00	1.22	1.22
ASC.04.03	Monitoring & Evaluation	0.00	0.00	0.26	0.26
ASC.04.10	Capital	0.00	0.00	0.35	0.35
ASC.05	Human resources	6.12	0.00	2.19	8.31
ASC.05	**Outreach and Communication Activities:**	**0.00**	**0.00**	**2.19**	**2.19**
ASC.05.01	Salary	5.75	0.00	0.00	5.75
ASC.05.03	Training	0.37	0.00	0.00	0.37
ASC.07	**Enabling environment**	**0.00**	**0.00**	**0.83**	**0.83**
ASC.07.01	Advocacy	0.00	0.00	0.33	0.33
ASC.07.02.03	Capacity building	0.00	0.00	0.49	0.49
Grand Total		**8.84**	**82.59**	**8.57**	**100.00**

Source: Karnataka State AIDS Preventation Society, Karnataka Health Promotion Trust

A2: HIV/AIDS related Expenditure by Provider and Financing Agents,(P X FA) for the year 2008-09 INR(Lakhs)

Aids Spending Category	Financing Agents (FA)	PS.01	PS.01.09	PS.02.02.01	PS.02.02.01.01	PS.02.02.01.01.01	PS.02.02.09	PS.02.01.02.05	PS.02.01.02.05.01	PS.01.02.01.02	PS.01.02.01.02.01	PS.01.02.01.04	PS.99	Total
		State govt Hospitals	State govt.Supply.of contraceptives	General hospitals (Allo.) Private for profit	Private Nursing Care facilities	Private Dispensaries and clinics (Allo.)	Private Dispensaries and Clinics (ISM & H)	Private Clinical laboratories	Privatre Clinical & Diagnostic lab	Private Dispensing chemists (Allo.)	PrivateDispensing Chemists (ISM & H)	Private Suppliers of Contraceptives	NGOs	
FA.01.01.01	Public	124.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	124.18
FA.02.04	Private/ Household Out of Pocket	2.13	0.03	1.66	6.61	68.20	8.46	110.42	12.27	907.14	43.39	0.00	0.00	1160.31
FA.02.05	External agencies/ NGO	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	120.47	120.47
Total		126.31	0.03	1.66	6.61	68.20	8.46	110.42	12.27	907.14	43.39	0.00	120.47	1404.96

Source: Karnataka State AIDS Preventation Society
Karnataka Health Promotion Trust

A3 : HIV/AIDS related Expenditure by Financing Source and Health Care Functions (FS x HF) INR (Lakhs)

Aids Spending Category:	Description	Financing Source			Total
		H & FW Dept	HHs OOPS	External/ NGO Sector	
		FS.01.01.02	FS.02.02	FS.02.03	
ASC.01	**Prevention**	**2.55**	**119.50**	**12.49**	**134.54**
ASC.01.01.98	Community Mobilization	0.00	0.00	8.56	8.56
ASC.01.02	Counseling & Psychological Support	0.00	0.91	0.00	0.91
ASC.01.04.01	Condom Usage	0.00	18.13	0.00	18.13
ASC.01.04.03	STD Treatment	0.60	96.96	0.77	98.34
ASC.01.07	Prevention of onward transmission	0.00	0.02	0.00	0.02
ASC.01.12	Services (clinical services + flavored condoms)	0.00	0.00	3.15	3.15
ASC.01.17	Nevirapine administration to mother during labour	0.00	3.09	0.00	3.09
ASC.01.17.01	Couple Counseling	0.00	0.19	0.00	0.19
ASC.01.17.03	Post testing Counseling for infant feeding	0.00	0.19	0.00	0.19
ASC.01.99	Contingency, TA & DA	1.95	0.00	0.00	1.95
ASC.02	**Care and treatment**	**35.70**	**1040.81**	**0.00**	**1076.51**
ASC.02.01.02	Prevention and treatment of OIs	0.00	14.55	0.00	14.55
ASC.02.01.03	Antiretroviral Therapy & Other Medicines	35.70	851.50	0.00	887.20
ASC.02.01.03.01	Terminal Life Care	0.00	1.76	0.00	1.76
ASC.02.01.03.02	Child Monitoring	0.00	4.09	0.00	4.09
ASC.02.01.05	HIV testing	0.00	35.40	0.00	35.40
ASC.02.01.05.01	HIV testing during ANC	0.00	2.76	0.00	2.76
ASC.02.01.05.02	HB Test	0.00	2.57	0.00	2.57

Aids Spending Category:	Description	Financing Source			Total
		H & FW Dept	HHs	External/ NGO Sector	
		FS.01.01.02	OOPS		
			FS.02.02	FS.02.03	
ASC.02.01.05.03	HB SAG	0.00	2.95	0.00	2.95
ASC.02.01.05.04	VDRL	0.00	2.99	0.00	2.99
ASC.02.01.05.05	Sputum	0.00	2.95	0.00	2.95
ASC.02.01.05.06	CD4 Test	0.00	55.89	0.00	55.89
ASC.02.01.05.07	Other clinical Tests	0.00	0.94	0.00	0.94
ASC.02.01.05.08	Diagnostic Services	0.00	8.67	0.00	8.67
ASC.02.01.10	Complementary and alternative medicines	0.00	53.79	0.00	53.79
ASC.04	**Programme management and administration**	**0.00**	**0.00**	**65.56**	**65.56**
ASC.04	Management cost	0.00	0.00	5.10	5.10
ASC.04.01	Programme Expenses	0.00	0.00	34.85	34.85
ASC.04.02	Administration	0.00	0.00	17.08	17.08
ASC.04.03	Monitoring & Evaluation	0.00	0.00	3.62	3.62
ASC.04.10	Capital	0.00	0.00	4.91	4.91
ASC.05	**Outreach and Communication Activities:**	**85.93**	**0.00**	**30.80**	**116.73**
ASC.05	Outreach and Communication Activities:	0.00	0.00	30.80	30.80
ASC.05.01	Salary	80.80	0.00	0.00	80.80
ASC.05.03	Training	5.13	0.00	0.00	5.13
ASC.07	**Enabling environment**	**0.00**	**0.00**	**11.62**	**11.62**
ASC.07.01	Advocacy	0.00	0.00	4.69	4.69
ASC.07.02.03	Capacity building	0.00	0.00	6.93	6.93
	Grand Total	**124.18**	**1160.31**	**120.47**	**1404.96**

Source: Karnataka State AIDS Prevention Society, Karnataka Health Promotion Trust

A4 : Total Expenditure by Health Providers and HIV/AIDS related Functions

(HP x HF), For Dharwad District (2008-09) (INR Lakhs)

Aids Spending Category	Description	PS.01.01.01	PS.01.01.01.02	PS.02.02.01	PS.02.02.01.01	PS.02.02.01.02	PS.02.02.09	PS.02.01.02.05	PS.02.01.02.05.01	PF.01.02.01.02	PF.01.02.01.02.01	PF.01.02.01.04	Total
		State govt. Teaching Hospitals	State govt. Supply .of contraceptives	General hospitals (Allo.) Private for profit	Private Nursing Care facilities	Private Dispensaries and clinics (Allo.)	Private Dispensaries and Clinics (ISM & H)	Private Clinical laboratories	Private clinical and Diagnostic labs	Private Dispensing chemists (Allo.)	Private Dispensing Chemists (ISM & H)	Private Suppliers of Contraceptives	
1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**
ASC.01	**Prevention**	0.01	0.00	0.48	5.85	15.89	0.24	2.38	0.00	93.57	1.09	0.00	119.50

ASC.01.02	Counseling & Psychological Support	0.01	0.00	0.00	0.12	0.69	0.10	0.00	0.00	0.00	0.00	0.00	0.91
ASC.01.04.01	I)Condom Usage	0.00	0.00	0.00	0.00	0.26	0.00	0.95	0.00	16.54	0.38	0.00	18.13
ASC.01.04.03	ii) STD Treatment	0.01	0.00	0.48	4.63	14.91	0.14	1.43	0.00	74.66	0.71	0.00	96.96
1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**
ASC.01.07	Prevention of onward transmission	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.02
ASC.01.17	Nevirapine administration to mother during labour	0.00	0.00	0.00	0.71	0.00	0.00	0.00	0.00	2.38	0.00	0.00	3.09
ASC.01.17.01	Couple Counseling	0.00	0.00	0.00	0.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.19
ASC.01.17.03	Post testing Counseling for infant feeding	0.00	0.00	0.00	0.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.19
ASC.02	**Care and treatment**	2.11	0.03	1.19	0.76	52.32	8.22	108.05	12.27	813.57	42.29	0.00	1040.81
ASC.02.01.02	Prevention and treatment of OIs	0.00	0.00	1.14	0.00	3.57	0.00	0.48	0.81	8.55	0.00	0.00	14.55
ASC.02.01.03	Antiretroviral Therapy & other medicines	0.01	0.00	0.00	0.00	38.97	0.00	25.66	0.00	786.86	0.00	0.00	851.50
ASC.02.01.03.01	Terminal Life Care	0.00	0.00	0.00	0.00	0.33	0.00	0.00	0.00	1.43	0.00	0.00	1.76
ASC.02.01.03.02	Child Monitoring	0.00	0.00	0.00	0.00	0.14	0.00	0.14	0.00	3.80	0.00	0.00	4.09
ASC.02.01.05	HIV testing	0.12	0.00	0.05	0.19	9.05	0.05	14.49	3.52	7.94	0.00	0.00	35.40

ASC.02.01.05.01	HIV testing during ANC	0.00	0.00	0.00	0.57	0.00	0.00	0.52	0.00	1.66	0.00	0.00	2.76
ASC.02.01.05.02	HB Test	0.08	0.00	0.00	0.00	0.02	0.00	2.30	0.17	0.00	0.00	0.00	2.57
ASC.02.01.05.03	HB SAG	0.46	0.00	0.00	0.00	0.00	0.00	2.29	0.20	0.00	0.00	0.00	2.95
1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**
ASC.02.01.05.04	VDRL	0.46	0.00	0.00	0.00	0.00	0.00	2.30	0.23	0.00	0.00	0.00	2.99
ASC.02.01.05.05	Sputum	0.30	0.00	0.00	0.00	0.00	0.00	2.42	0.22	0.00	0.00	0.00	2.95
ASC.02.01.05.06	CD4 Test	0.02	0.00	0.00	0.00	0.23	0.00	48.76	6.89	0.00	0.00	0.00	55.89
ASC.02.01.05.07	Other clinical Tests	0.68	0.02	0.00	0.00	0.00	0.00	0.00	0.24	0.00	0.00	0.00	0.94
ASC.02.01.05.08	Diagnostic Services	0.00	0.00	0.00	0.00	0.00	0.00	8.67	0.00	0.00	0.00	0.00	8.67
ASC.02.01.10	Complementary and alternative medicines	0.00	0.00	0.00	0.00	0.00	8.17	0.00	0.00	3.33	42.29	0.00	53.79
	Total	2.13	0.03	1.66	6.61	68.20	8.46	110.42	12.27	907.14	43.39	0.00	1160.31

A5: Profile of the Surveyed HIV/AIDS affected Persons

Sl No	Items	Catogaries	%
1	Distribution of Patients by Area	Rural	49.28
		Urban	50.72
2	Religious Background	Hindus	88.82
		Muslim	10.88
		Christian	0.28
3	Social Status	SC	18.93
		ST	9.45
		OBC	18.91
		Minority	11.17
		General	41.54
4	Type of Family	Nuclear	96.56
		Joint	3.44
5	Size of Family	Below 5	67.91
		6 to 10	29.23
		11& above	2.87
6	Economic Status	BPL	40.00
		APL	60.00
7	Patients' Period of living with HIV	Upto 1 Year	19.77
		Upto 2 Year	45.56
		Upto 3 Year	20.06
		4 to 8 Years	12.89
		9 Years & above	1.72
8	Educational Status of the Patients	Illeterate	13.87
		Literate	1.79
		Primary	14.43
		Higher Primary	27.73
		Secondary	35.10
		Higher Secondary	5.31
		Graduate & above	1.77
9	Occupational Status	lab our class	44.84
		Buisness	16.81
		CSW	12.68
		Driver	9.75
		Housewife	8.26
		Salaried Employed	7.66
10	Patients' Age group	Children	2.86
		18-35	52.15
		36-52	44.99
11	Domicile Status	Resident	43.55
		Migrant whithin State	39.26
		Migrant whithin India	17.19

Application of National Aids Spending Assessment (NASA) frame work to Resource Flows for HIV/AIDS: A Case Study of Dharwad District

A : HOUSEHOLD DETAILS

- *Self Introduction by the interviewers and team members*
- *I / We have come to gather some information from you (respondent) that would be used for preparing HIV / AIDS Accounts for Dharwad District in Karnataka..*
- *I assure you that the information obtained from you will be kept confidential and used solely for the purpose of research.*
- *Since some of the questions I will be asking are extremely personal in nature, may I have your voluntary consent for sharing the required information?*
  1. *Yes – Continue interview*
  2. *No. END*

H I: IDENTIFICATION PARTICULARS

District ____________________ Code ☐☐ Taluka ____________________ Code ☐☐

Village/Urban Block ____________________ Code ☐☐

Name of the Respondent / Household Address ____________________

Interviewer Name and Signature ____________________ Code ☐☐

Field supervisors name and Signature ____________________ Code ☐☐

H II: HOUSEHOLD PARTICULARS

No.	QUESTIONS AND FILTERS	CODING CATEGORIES
1	*What is the religion of the head of the household?*	
2	*What is the social group of the head of the household?*	
3	*Type of family*	Nuclear……………………………1 Joint ……………………………2
4	*Family size*	Male: Female : Total:
5	*Domicile status of Household*	Permanent resident of district…………1 Migrant from other district…………2 Migrant from other State ……………3
6	*Does your household possess BPL Card?*	YES - 1 NO - 2

H III: Details about patient

	Period of illness	Years Months
	Occupational status	
	Educational status	
	Are there any other member in your family suffering from HIV/AIDS	Yes=1 No=2
	If yes, please specify relation	Type of relation 1. 2 3.

H-IV. Expenditure Details about HIV AIDS

Q. I will ask a number of questions about expenditures related to your HIV / AIDS in the last one year. The questions are about costs incurred, for example, treatment, drugs and transport, and about who provided these services and goods. Will you be able to tell us the expenses incurred for different Services availed

Sl.No	Type of HIV/AIDS treatment	Costs incurred during year 2008-09																
		Consultancy charges		Diagn. Clinic./ lab tests		Treatment charges		Inpatient 1. outpatient-2	Drugs		Patient's		Attendants		NGO / VCTCT		Total (Sub Total+M+O+Q+S+U)	Source of expenses
		Costs	Provider	Costs	Provider	Costs	Provider		Costs	Provider	Transport costs	Accomodation costs	Transport costs	Accomodation costs	Costs	Provider		
1	HIV testing																	
2	Counselling & Psycological Support																	
3	Preventation of onward transmission																	
4	i)Condom Usage																	
5	ii) STD Treatment																	
6	I)Awareness																	
7	II) Post exposer prophylaxis																	
8	iii) Blood Safety																	
9	Preventation and treatment of OIs																	
10	Palliative Care																	
11	HB Test																	
12	HB SAG																	
13	VDRL																	
14	Sputam																	
15	CD4 Test																	
16	Other Clinical																	
17	Dignostic Services																	
18	Antiretroviral Therapy																	
19	Complementary and alternative medicines																	
20	Mitigation activities (exNutritional Support)																	

Out of regular Income=1, Own savings=2, Borrowings from relatives & friends=3, Borrowings from institutional lenders=4, Borrowings from money lenders=5, Distress sale of articles =6, Insurance = 7, Others (Specify)=8

Contd......

Sl.No	Type of HIV/AIDS treatment	Costs incurred during year 2008-09																
		Consultancy charges		Diagn. Clinic. lab tests		Treatment charges		Inpatient = 1, outpatient-2	Drugs		Patient's		Attendants		NGO / VCTCT		Total (Sub Total+M+O+Q+S+U)	Source of expenses
		Costs	Provider	Costs	Provider	Costs	Provider		Costs	Provider	Transport costs	Accomodation costs	Transport costs	Accomodation costs	Costs	Provider		
21	Terminal Life Care																	
22	Support for surviving family and orphans																	
23	Food Items																	
24	Clothing																	
25	Livelyhood Support																	
26	Hostel facilities for orphans																	
For Pregnant Women																		
27	HIV testing during ANC																	
28	Couple Counselling																	
29	Post testing Counselling for infant feeding																	
30	Informed Consent for Nevirapine																	
31	Nevirapine administration to mother during labour																	
32	Child Monitoring																	

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AKSHARA GRANTHALAYA
ACC.NO. 049435